

**COGNITIVE AND LINGUISTIC COMPLEXITY IN A TASK-BASED
COMPUTER-ASSISTED LANGUAGE-LEARNING SYLLABUS FOR
HEALTH SCIENCES STUDENTS**



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DECLARATION

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ABSTRACT

Effective doctor-patient communication is one of the key components entrenched in health sciences curriculum of universities in South Africa. With most patients speaking isiZulu as their mother tongue language, it is imperative that effective healthcare is provided in the patients' language. The inclusion of the teaching of African languages in health sciences programmes is crucial. Whilst efforts are made to improve the status quo of second language (L2) teaching and learning of African languages within South African higher education institutions, the need for research based on scientific and principled theories of second language acquisition (SLA) is still required. This study, therefore investigates an isiZulu task-based syllabus design for doctor-patient communication for health sciences students studying at the University of KwaZulu-Natal, South Africa. The study adopts a multifaceted approach to the teaching of isiZulu L2 that invokes key principles of task-based language learning and teaching (TBLT), language for specific purpose (LSP) and computer-assisted language learning (CALL) related to second language acquisition.

The aim of this study is to explore a procedure for a task-based CALL syllabus design based on a design-based approach. To prepare students for the realities in a healthcare context, it was essential that the investigation on syllabus design focused on real authentic communication tasks.

Medical students registered for a Bachelor of Medicine and Bachelor of Surgery (MBChB) at the Nelson R Mandela School of Medicine, University of KwaZulu-Natal, South Africa participated in a needs analysis, an essential first step towards the investigation of the design of the task-based CALL syllabus. The purpose of the analysis was to ascertain the proficiency levels of the students, gather information regarding their current knowledge about isiZulu, or lack of knowledge thereof, and digital skills to be learnt and developed to acquire isiZulu skills to conduct a successful doctor-patient consultation.

To create an organic learning environment that allows students to learn isiZulu in a real communicative sense, it was necessary to design relevant, locally produced authentic learning material that reflect doctor-patient communication, based on the students' needs analysis. Hence, simulated and authentic doctor-patient interviews were used to create communication target tasks appropriate for healthcare professionals at a basic-intermediate proficiency level of isiZulu. The communication target tasks were used as the unit of analysis for the investigation into syllabus design. Communication tasks were graded and sequenced in terms of their cognitive complexity and linguistic complexity, which was then used to design isiZulu pedagogic tasks for enhancing second language development of students.

Insights and perspectives on how to include focus on grammatical form in a communicative way were also considered.

The findings of the study indicated that most of the communication target tasks were cognitively complex in terms of Robinson's (2005) Cognition Hypothesis. It also showed that the tasks exemplified high syntactic complexity. Target tasks were simplified by descaling/decomplexifying the target tasks, using Robinson's SSARC Model (2010) to ensure that the pedagogic tasks are more manageable for students to perform.

The study is concluded that the design of a task-based CALL syllabus for isiZulu L2 health sciences students is a complex process and the success of such a syllabus design is dependent on several key elements.

OPSOMMING

Doeltreffende dokter-pasiënt kommunikasie is een van die sleutelkomponente vasgelê in die gesondheidswetenskappe kurrikulum van universiteite in Suid-Afrika. In die lig daarvan dat die grootste getal pasiënte isiZulu as hul eerste (moeder) taal praat, is dit noodsaaklik dat doeltreffende gesondheidsorg in pasiënte se taal voorsien word. Die insluiting van die onderrig van Afrikatale in die gesondheidswetenskappe programme van universiteite is dus noodsaaklik. In die lig van pogings wat aangewend word om die huidige stand van tweedetaalonderrig en –leer van die Afrikatale aan universiteite te verhoog, bestaan daar ‘n behoefte aan navorsing gebaseer op wetenskaplike teorieë van tweedetaalverwerwing. Hierdie studie ondersoek dus Taakgebaseerde sillabusontwerp vir dokter-pasiënt kommunikasie vir die onderrig van gesondheidswetenskappe studente aan die Universiteit van KwaZulu-Natal, Suid-Afrika. Die studie gebruik ‘n multi-faset benadering tot die onderrig van isiZulu as ‘n tweedetaal wat sleutelbeginsels ontgin van taakgebaseerde leer en onderrig, taal vir spesifieke doeleindes, en rekenaargesteuende onderrig soos dit verband hou met tweedetaalverwerwing.

Die doel van die studie is om ‘n prosedure te ondersoek vir taakgebaseerde rekenaargesteuende sillabusontwerp gebaseer op ‘n ontwerp-gebaseerde benadering. Ten einde studente voor te berei vir die kommunikasie werklikhede van die gesondheidsdientekonteks, was dit noodsaaklik dat die ondersoek na sillabusontwerp fokus op outentieke kommunikasietake.

Mediese studente wat geregistreer is vir ‘n Baccalaureus in Geneeskunde (MBChB) by die Nelson R Mandela Skool vir Geneeskunde aan die Universiteit van Kwazulu-Natal, Suid-Afrika, het deelgeneem aan ‘n behoefte-analise, ‘n noodsaaklike eerste stap in die ondersoek na die ontwerp van ‘n taakgebaseerde rekenaar-gesteunde sillabus. Die doel van die analise was om die taalvaardigheidsvlakke in isiZulu van die studente te bepaal, inligting te verkry van hulle bestaande kennis van isiZulu, of afwesigheid van taalkennis, en digitale vaardighede wat hulle nodig het om te leer en te ontwikkel, ten einde isiZulu taalvaardigheid te verwerf benodig vir ‘n doeltreffende dokter-pasiënt konsultasie.

Ten einde ‘n organiese leeromgewing te skep wat studente in staat stel om isiZulu in ‘n werklikheidsgetroue kommunikatiewe sin te leer, was dit nodig om relevante, plaaslik geskepte outentieke leermateriaal te ontwerp wat dokter-pasiënt kommunikasie weergee, soos gebaseer op studente se behoefte analise. Dus is gesimuleerde en outentieke dokter-pasiënt onderhoude gebruik om kommunikasie teikentake te skep wat toepaslik is vir professionele gesondheidspersoneel met ‘n basiese-intermediêre taalvaardigheidsvlak in isiZulu. Hierdie kommunikasie teikentake is gebruik as

die eenheid vir analise in die ondersoek van sillabusontwerp. Die kommunikasietake is gegradeer en georden in terme van hul kognitiewe kompleksiteit en linguïstiese kompleksiteit, wat daarna gebruik is in die ontwerp van pedagogiese take vir isiZulu ten einde die tweedetaalontwikkeling van studente te bevorder. Insigte en perspektiewe rakende die insluiting van fokus op grammatikale vorm op 'n kommunikatiewe wyse, is ook beskou.

Die bevindings van die studie het aangedui dat die meeste van die kommunikasietake kognitief kompleks is in terme van Robinson (2005) se kognisiehipotese. Dit het ook aangetoon dat die take 'n hoë mate van sintaktiese kompleksiteit vertoon. Teikentake is vereenvoudig deur die afskaling/dekompleksiefisering van die teikentake, deur gebruik van Robinson (2010) se SSARC model, ten einde te verseker dat die pedagogiese take meer toepaslik is vir leerders om uit te voer.

Die studie het tot die slotsom gekom dat die ontwerp van 'n taakgebaseerde isiZulu tweedetaal sillabus vir gesondheidswetenskappe studente 'n komplekse proses is en dat die doeltreffendheid van so 'n sillabus ontwerp afhanklik is van verskeie sleutel elemente.

IQOQA

Ukuxhumana ngendlela efanele phakathi kukadokotela nesiguli kuyisakhi esibaluleke kakhulu ohlelweni lwezemfundo lwesayensi yezempilo emanyuvesi aseNingizimu Afrika. Njengoba iningi leziguli zikhuluma isiZulu njengolimi lwazo lwebele, kubalulekile ukuthi ukunakekelwa kwazo ngokwezempilo kunikezelwe ngolimi lwazo. Ukufakwa kokufundiswa kwezilimi zase-Afrika ezinhlelweni zesayensi yezempilo kubaluleke kakhulu. Nakuba ikhona imizamo eyenziwayo ukuthuthukisa isimo sokufundiswa nokufundwa kolimi lwesibili (L2) lwase-Afrika ezikhungweni zemfundo ephakeme eNingizimu Afrika, isidingo socwaningo olusekelwe ezesayensi nemigomo yezinjulalwazi zokufundiswa nokufundwa kolimi lwesibili (SLA) kusadingeka. Ngakho-ke, lolu cwaningo luhlola kabanzi uhlelo lokufundisa isiZulu olwesekelwe ukwenza oluveza indlela yokuxhumana phakathi kukadokotela nesiguli olwenzelwe abafundi bezesayensi yezempilo abafunda eNyuvesi YaKwaZulu-Natali, eNingizimu Afrika. Lolu cwaningo luthathe izindlela ezahlukene zokufundisa isiZulu njengolimi lwesibili okuhlanganisa imigomo ebalulekile yokufundiswa nokufundwa kolimi okusekelwe indlela yokwenza, ukufundiswa kolimi kwenzelwa imigomo ethile kanye nokufunda nokufundiswa kolimi lwesibili (TBLT), ukufundiswa kolimi kwenzelwa izinhloso ezithile kanye nokufundiswa kolimi kulekelwa usizo lwamakhompyutha (CALL) okuhlobene nokufunda nokufundisa ulimi lwesibili.

Inhloso yalolu cwaningo ukuhlola indlela yokufundisa okusekelwe indlela yokwenza okusebenzisa ubuchwepheshe bamakhompyutha okunesisekelo sendlela yokuqamba. Ukuze ulungiselele abafundi ukuze bakwazi ukubhekana nobunjalo besimo endaweni enakekela ngezempilo uma sebepothule iziqu, kwakubalulekile ukuba ukuhlolwa kohlelo lokufunda oluhlongoziwe lugxile emaqinisweni emisebenzi yezokuxhumana.

Abafundi bezempilo ababhalisele iziqu zobudokotela (MBChB) eNelson R Mandela School of Medicine, eNyuvesi YaKwaZulu-Natali, eNingizimu Afrika babamba iqhaza ekuhlaziyeni izidingo, okuyigxathu lokuqala elibaluleke kakhulu ekuhloleni uhlelo lokufunda olusekelwe indlela yokwenza (CALL) kusetshenziswa ubuchwepheshe bamakhompyutha. Inhloso yokuhlaziya kwakuwukuthola amazanga abafundi okukhuluma isiZulu ngokuhululeka, ukuqoqa ulwazi olumayelana nokuqonda kwabo isiZulu njengamanje, ukuntuleka kolwazi lwaso kanye namakhono okubhala ngekhompyutha okumele afundwe futhi athuthukiswe ukuze bathole amakhono esiZulu okuxhumana okuyimpumelelo phakathi kukadokotela nesiguli uma kudingeka.

Ukuze kwakhiwe isimo sokufunda esiphilayo esivumela abafundi baziqeqeshe olimini lwesiZulu ekuxhumaneni kwangempela, kwakunesidingo sokuba kwakhiwe izinsiza-kufundisa eziqondene ngqo

nakho, ezakhiwe ngalo ulimi lwesiZulu ezikhombisa ukuxhumana phakathi kukadokotela nesiguli, ezakhelwe ukuhlaziya izidingo zabafundi. Ngakho-ke izingxoxo ezifanele futhi eziyiqiniso phakathi kukadokotela nesiguli zasetshenziselwa ukwenza imisebenzi yokuxhumana ehlosiwe kubasebenzi bezempilo abenza umsebenzi abawufundele emazingeni ayisisekelo aphakathi okukhuluma ngokukhululeka ulimi lwesiZulu. Imisebenzi yokuxhumana ehlosiwe yasetshenziswa njengeyunithi yokuhlaziya ukuhlola ukwakhiwa kohlelo lokufunda. Imisebenzi yokuxhumana yakalwa futhi yalandelaniswa ngokujula bokuqonda nobolimi, obabe sebusetshenziswa ukwakha imisebenzi yokufundisa isiZulu ukuthuthukisa ulimi lwesibili lwabafundi. Kwabhekwa ukuhlola nokuqonda ukuthi kungafakwa kanjani ekugcizeleleni igrama ngezindlela zokuxhumana.

Okutholakele kulolu cwaningo kukhombise ukuthi imisebenzi eminingi ehlose ukuxhumana yayinokuningi okuthinta ingqondo ngokukaRobinson's Cognition Hypothesis (2005). Okutholakele kuphinde kwakhombisa ukuthi imisebenzi ikhombise ukuhleleka kwemisho okusezingeni eliphezulu. Imisebenzi ehlosiwe yenziwa lula ngokuba kuhlukaniswe imisebenzi ehlosiwe, kusetshenziswa indlela kaRobinson iSSARC (2010) ukuqinisekisa ukuthi imisebenzi yokufundisa ulimi ilula futhi ayimningi ukuze abafundi bakwazi ukuyenza.

Lolu cwaningo luphethe ngokuthi ukwakhiwa kohlelo lokufunda olusebenzisa obuchwepheshe bamakhompyutha olugxile ekwenzeni lolimi lwesibili kubafundi bezesayensi yezempilo kuwuhlelo olujulile kanti impumelelo yohlelo lokufunda olunjalo incike ezintweni eziningi ezibalulekile.

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ABBREVIATIONS

CAFFI	computer-assisted form-focussed language instruction
CALL	computer-assisted language learning
CATBI	computer-assisted task-based instruction
CHE	Council on Higher Education
CLT	communicative language teaching
CMC	computer-mediated communication
CEFR	Common European Framework for Reference for Languages
FonF	Focus on form
HEI	Higher education institution
ISLA	Instructed second language acquisition
L1	first language
L2	second language
LSP	language for specific purpose
MBChB	Bachelor of Medicine and Bachelor of Surgery
OSCE	Objective structured clinical examination
SANTED	South African Norwegian Tertiary Education Development
SLA	second language acquisition
SLD	second language development
SSARC	stabilize-simplify-automatize-restructure-complexify
TBA	task-based approach
TBLA	task-based language assessment
TBLT	task-based language teaching
UKZN	University of KwaZulu-Natal

CHAPTER 1

INTRODUCTION

1.1 Aim and rationale of study

Former South African President Nelson Mandela once remarked, “If you talk to a man in a language he understands, that goes to his head. If you talk to him in his own language that goes to his heart”. This quote holds true as many diverse and multilingual communities communicate and interact with each other. Being proficient in a language other than one’s own home language or mother-tongue language is an essential skill for engaging with people from other communities. Essentially, language proficiency is a survival tool for many people living and working in different parts of the globe. One of the common problems experienced by many private and public sectors is the language barrier issue. It is most prevalent in the healthcare sector, especially in South Africa (SA), which is home to eleven official languages. The communication challenge is the one of the greatest obstacles to more efficient service delivery in various township or rural hospitals that young doctors in training are faced with. A recent documentary, entitled ‘Township ER Special’, was broadcasted on Carte Blanche (Carte Blanche, 2018) on the 1 April 2018, which profiled five young healthcare professionals from different cultures on call at a local KwaZulu-Natal hospital. Township ER presented the many challenges facing South African doctors today, one being the communication challenges.

In South Africa, specifically in KwaZulu-Natal, it is essential to be able to communicate effectively with patients in their home language. According to Statistics SA (2011), isiZulu is the predominantly spoken language in South Africa. Regionally, nearly 80% of the 10.2 million people in KwaZulu-Natal speak their home language, isiZulu. It should be emphasised that proficiency in isiZulu is vital for effective communication with patients for health sciences students in training. The issue of language barriers and communication breakdowns that affect doctor-patient communication is well documented at both national and international levels (Crawford, 1999; Levin, 2006; Schlemmer & Mash, 2006; Yeo, 2004). Globally, healthcare professionals encounter increased language and cultural challenges with multilingual populations. As a result, much emphasis is being placed on providing effective and efficient health services to patients in their own language (Yeo, 2004). Local studies have also emphasized the need for transformation in health sciences curriculum and the inclusion of African languages within their programmes (Hartman, Kathard, Perez, Reid, Irlam, Gunston, Janse vanRensburg, Burch, Duncan & Hellenberg, Van Rooyen, Smouse, Sikakana, Badenhorst, Ige, 2012; Maseko & Kaschula, 2009; Matthews, 2013; Pillay & Kathard, 2015). Furthermore, the announcement

by the former Higher Education, Minister Blade Nzimande, that “all university students will be required to learn at least one African language as a condition for graduating” (Nzimande, 2011) has reinforced the promotion of multilingualism by encouraging various universities across SA to offer African language courses. The University of KwaZulu-Natal (UKZN) Language Policy Framework of 2006 (UKZN, 2006) has supported the promotion of the isiZulu language by offering isiZulu as a mandatory module to all undergraduate students not proficient in the language. Moreover, the UKZN Language Policy, is aligned to the Language Policy Framework for South African Higher Education (Council on Higher Education [CHE], 2001) and the Policy on Language Services for the National Department of Health (Department of Health, 2015), as it strives for multilingualism and the use of African languages within the higher education and healthcare contexts.

Transformation is needed in the South African higher education domain, particularly with the teaching and learning of African languages in health sciences curriculum. The teaching of African languages should be part of such a curriculum. Young doctors in training are entering a world where good communication skills with their patients is essential as many patients understand and speak only one language, i.e. their indigenous mother tongue language. It is important that students be equipped with the necessary language and communication skills needed to conduct consultations in an effective and safe manner, thereby avoiding potential misdiagnosis and miscommunication. Essentially, being able to conduct an interview in the patients’ language should become one of the learning outcomes. South African higher education institutions (HEIs) should adopt a responsible and an accountable educational approach that would enable them to foster other learning abilities to achieve successful learning in young doctors in training.

Curriculum transformation to integrate and support African language initiatives have been undertaken in several South African universities. In order to promote African language programmes the University of Cape Town (UCT) (Hartman et al., 2012) and Stellenbosch University (Du Plessis & De Villiers, 2014) have embarked on teaching and learning projects to foster isiXhosa, using current teaching trends such as task-based language learning and teaching (TBLT) and language for specific purposes (LSP). Further vocational training programmes are offered at Rhodes University to promote isiXhosa, by adopting TBLT and LSP approaches as their teaching methods for Pharmacy and Law students (Maseko, 2008; Maseko & Kaschula, 2009).

At the University of KwaZulu-Natal (UKZN), in Durban, South Africa, an earlier multilingualism initiative, called the South African Norwegian Tertiary Education Development (SANTED)

Programme recognised the need for students to be communicative competent in isiZulu within professional programmes (Ndimande-Hlongwa, Mazibuko, & Gordon, 2010). The project further highlighted the importance of intellectualizing isiZulu as an African language in tertiary institutions. It also emphasised that languages are a resource that should be managed and conserved during the course of a degree in order to sustain the learning of isiZulu (Ndimande-Hlongwa et al., 2010: 159). On similar footing as the multilingualism SANTED project, the current year-long isiZulu module offered at first year level to the health sciences students at UKZN does provide valuable language skills to students. However, it is evident that this mandatory course is insufficient to equip students to communicate effectively with their patients in a clinical setting (Matthews, 2013; Matthews & Gokool, 2018; Ndebele, Gokool, & Pillay 2017). Although this is the case in mainstream teaching and learning of second language (L2) isiZulu, the College of Health Sciences has initiated teaching medical-specific isiZulu communication skills to L2 health sciences students.

The ongoing, research and teaching innovative documented by the South African universities are acknowledged (Cockerill, 2002; Du Plessis, 2011; Smitsdorff, 2008; Steenkamp, 2009), however, there remains a huge demand in South Africa to further develop and strengthen African languages such as isiZulu. To advance in the teaching and learning of isiZulu within the health sciences curriculum, language learning material and resources that are grounded on principled language learning theories are essential. To the researcher's knowledge, no documented study exists that incorporates computer-assisted language learning for health sciences students and the promotion of learner autonomy during the clinical phases of the Bachelor of Medicine and Bachelor of Surgery (MBChB) curriculum. Neither is there a study that addresses cognitive and linguistic complexity in a task-based isiZulu syllabus design for doctor-patient communication. This study is interdisciplinary in that it is at a crossroad between teaching an African language with technology and health sciences by enhancing effective doctor-patient clinical communication.

Therefore, the aim of this study is to develop a procedure for a task-based specific purposes computer-assisted language learning (hereafter CALL) syllabus design that would provide a scientific base for future language practitioners and will prepare students for the realities in a clinical setting where isiZulu is the spoken language for most patients. The aim of this study is also to conduct a language and technological needs analysis, which entails obtaining information on the needs and objectives of health sciences students. The intended purpose of this analysis is to ascertain firstly, the proficiency levels of the health sciences students. Secondly, information regarding their current knowledge about

isiZulu, lack of knowledge thereof as well as language and digital skills to be learnt and developed to have a successful doctor-patient consultation is required.

The preliminary stage of this study was to establish the most common illnesses that doctors encounter at local hospitals. Common illnesses included respiratory infections, urinary tract infections, gastrointestinal and cardiovascular problems, as well as HIV-related issues. After identifying the common illnesses, it was important to obtain the raw data that is spoken between patients and doctors. The purpose of the simulated or authentic doctor-patient interview was to create communication tasks appropriate for healthcare professionals at a basic-intermediate proficiency level of isiZulu.

In addition to creating the communication tasks, the objective of this study is to analyse the communication or target tasks according to its cognitive complexity and linguistic complexity. The intention of this analysis is to structure the design of the syllabus and to determine the grammatical linguistic features and core vocabulary required for the syllabus design. In addition, students will be taught how these sentence structures are constructed and for them to produce language output in isiZulu on completion of a task. The communication tasks also serve as a template for learners to learn how different aspects of the text correlate with each other.

The purpose of the study is to exemplify the way principled theories of task-based language learning and teaching are considered for the design of a syllabus to teach isiZulu additional or second language. The rationale for implementing a TBLT approach in this study is to focus on the goals or the outcomes of language used in specific tasks. The reason for this goal-oriented focus on tasks is that the student is provided an opportunity to utilize the language taught in the communicative targets tasks to enhance and promote interaction and communication in the real-working environment beyond the confines of the classroom. The rationale for adopting a TBLT approach to syllabus design in conjunction with the principles of CALL and LSP is to create an organic context in which learners can perform the communicative tasks. In this way, language learning encourages health sciences students to enhance their communicative competency and language output in their working lives. It also fosters learners to be responsible and accountable for their own learning thereby promoting learner autonomy.

1.2 Theoretical framework

The theoretical framework of this study is based on the principled theories in the research field of second language acquisition (hereafter SLA). However, recent developments in SLA have now begun to refer to SLA as second language development (SLD). This study also considers the views posited

by Larsen-Freeman on SLD (Larsen-Freeman, 2015). With its roots embedded in Complexity Theory, second language development seems to be a more appropriate term to be adopted as it infuses language with more “dynamic quality” and views language as “an ever-developing resource” (Larsen-Freeman, 2015: 491). Language learning is a complex phenomenon. According to Larsen-Freeman (2015), language is constantly changing and developing; there is no finality to the process of learning a language. She argues that learners are determined on producing meaningful communication and not acquiring language forms. To interact meaningfully, learners utilize available language resources. Moreover, Larsen-Freeman (2015) maintains that language is a social process of co-adaptation. In other words, language resources of individuals are adapted when interaction occurs with each other. Larsen-Freeman (2015: 501) emphasises that second language development involves the learner in the developmental process. Transformation occurs within the internal processes of the learner, which is similar to learning the steps of a new skill. Although Larsen-Freeman recommends that SLA be replaced by SLD, this study does not make a choice between the two terms. It uses both terms SLA and SLD to refer to specific processes. Whereas SLA is concerned with the acquisition of second languages, SLD refers to a wider spectrum of understanding language learning and the development thereof.

Interest in the transdisciplinary framework for SLA, a “new, rethought second language acquisition (SLA)” proposed by Douglas Fir Group (2016: 39), has been sparked by the arguments for second language development by Larsen-Freeman. According to the Douglas Fir Group (2016), the key issue of this approach is to move beyond the confines of disciplines and to generate new knowledge. The researchers of the Douglas Fir Group (2016: 19) state that the field of SLA pursues three key elements the first of which relates to an understanding of the processes by which all individuals learn and use an additional language or a second language, at any stage in their lives. The second issue concerns an explanation for the development of language and the effects of such learning and the third issue relates to the characterization of the linguistic and non-linguistic influences that produce and characterize the procedures and results thereof. Given the wide field of SLA, it remains centred on the understanding of language development in an additional language (Douglas Fir Group, 2016: 19). However, the authors from the group argue that SLA should be receptive to the changing demands of persons surviving with multiple languages at various points of their lives in relation to their education, multilingual progress, social behaviour and overall accomplishments in different domains. They argue further that a new SLA should be understood by investigating the “learning and teaching of additional languages across private and public, material and digital social context in a multilingual world” (Douglas Fir Group, 2016: 19). Hence, the transdisciplinary framework for SLA specifically strives to

incorporate the many layers of prevailing information about the developments and effects of additional language learning by developing clear patterns and configurations of findings across domains (Douglas Fir Group, 2016: 20). It is against this understanding of SLA that the current study is positioned. Similar to the transdisciplinary framework adopted by the Douglas Fir Group, which integrates many layers of existing knowledge, this study seeks to implement an approach that synergises language learning with technology, good clinical communicative skills in the healthcare context and social responsibility and accountability needed from South African higher education institutions.

Thus, this study is concerned with SLA theories that relate to TBLT, CALL and LSP. It also considers recent developments in instructed second language acquisition (ISLA) which is an offshoot of SLA. According to Benati & Nuzzo (2017), ISLA concerns the influence of instruction on second language learning processes. ISLA examines key issues such as input, output, negotiation of meaning and the effects it has on language teaching and classroom practices highlighted by Loewen & Sato (2018). In addition, this study further adopts a communicative approach to TBLT, a research area related to the design of tasks. It also focusses on how different design features such as sequencing, selecting and grading of authentic tasks impact on language production, cognitive processes and learning outcomes in unique ways. There is a wide spectrum of different research perspectives on TBLT that have been well documented and explored by researchers (Benson, 2015; Long, 2015; Nunan, 1989 & 2004; Ortega, 2005; Oura, 2001; Park & Slater, 2014; Pica, Kanagy & Faldoun, 1993; Skehan, 1996; Steenkamp, 2009; Willis & Willis, 2008; Yousefi, Mohammadi & Koosha, 2012). The principles of TBLT promote the use of meaningful real-world tasks as it acts as the ideal promoter of experiential learning. Research has shown that SLA is enhanced when learners engage in conversational interaction and negotiation of meaning (Ellis, 2003 & 2005; Krashen, 1982; Long, 1981). The critical point is that engaging learners in interaction is effectively achieved through the use of tasks (Lee, 2000). TBLT also emphasises reliable selecting, grading and sequencing of tasks to assist learners to build on prior knowledge and concentrates on authentic tasks which the learner will need to perform in the real world, as opposed to pedagogic tasks (Nunan, 2004: 1-6). Empirical studies show that accurate task sequence and complexity have significant effects on learners (Madarsara & Rahimy, 2015; Yousefi et al., 2012). The current study attempts to contribute to this field by demonstrating how cognitive complexity analysis can be used within task-based instruction for the purposes of selecting, grading and sequencing tasks in a specific purposes isiZulu syllabus for health sciences students.

The study also investigates the use of cognitive complexity analysis to inform the selecting, grading and sequencing of tasks for the purpose of syllabus design of an isiZulu specific purposes course for

doctor-patient communication. The key issue under investigation relates to cognitive complexity and linguistic complexity of isiZulu pedagogic tasks using CALL for health sciences students. The classification of tasks according to cognitive demands it places on learners has generated much attention owing to Robinson's Cognition Hypothesis (2001a & 2001b & 2005 & 2007) and the stabilize-simplify-automatize-restructure-complexify (SSARC) model (Robinson, 2010). The main principle of the Cognition Hypothesis is that the cognitive complexity of tasks should function as the theoretical basis for task design. Robinson (2001a: 287) argues that an increase in cognitive complexity should be the single guiding element when sequencing pedagogic tasks for learning purposes. For this study, communication tasks, appropriate for health sciences, were created in view of identifying key task types. Individual isiZulu communicative tasks were analysed to establish the level of cognitive complexity and linguistic complexity. Each one of the tasks were scaled according to their cognitive complexity and linguistic complexity, by virtue of Robinson's Triadic Componential Framework (2005) and the SSARC Model (2010). African languages such as isiZulu are generally regarded as highly inflected language and studies show that linguistic complexity is a salient feature of such languages (Collentine, 2010). Therefore, the intention of analysing the dialogues is to identify the relationship that co-exists between cognitive complexity and linguistic complexity in communication task design. This is achieved through the cognitive processes in task-based learning proposed by Robinson et al (2013) and Skehan (1996). Recent studies claiming that tasks should be sequenced in terms of increases in complexity for the development the learner's interlanguage system to meet the increasing demands of the task are also considered (Gilabert, Barón, & Levkina, 2011; Kuiken & Vedder, 2011; Robinson, 2011; Yousefi et al., 2012).

The study further adopts the recent communicative language teaching (CLT) approaches relating to grammar-based communicative tasks. Earlier traditional approaches such as Grammar-Translation and presentation-practice-production focussed particularly on structural features of the language rather than on meaning carried by the language through communication (Ellis, 2014). Emphasis was placed on the analysis of the language forms and at the expense of real communication (Nassaji & Fotos, 2011: 3). Because of these earlier approaches, many African languages including isiZulu began being taught as a L2 where focus was on grammatical form and function at the expense of communicative meaning. However, current research indicates that grammatical structures are key elements to focus on form (FonF). Tasks can be designed to bring about the use of specific grammatical structures such as task-essentialness, task-naturalness and task-utility (Keck & Kim, 2014; Loschky & Bley-Vroman, 1993).

Recent research suggests that learners acquiring a L2 achieve better outcomes and are likely to enhance further in the target language when they are directed to attend to some form of grammatical structure (Ellis, 2001 & 2002 & 2014; Ellis, Basturkmen & Loewen 2002; Housen & Kuiken, 2009; Keck & Kim, 2014; Long & Robinson, 1998; Skehan, Xiaoyue, Qian & Wang, 2012). Drawing attention to linguistic form in the wider communicative context is known as FonF and is evident in more recent approaches such as TBLT and CALL (Basturkmen, Loewen & Ellis, 2002; Collentine & Collentine, 2015; DeKeyser, 1998). Various proposals are evident on how to incorporate FonF in instructed L2 learning and much discussion on this issue is included in the current study (Doughty, 2001; Doughty & Williams, 1998; Fotos, 1993; Klapper & Rees, 2003; Nassaji, 2014). FonF is viewed in the sense that it serves as raising learners' consciousness by assisting them observe important forms in input (Klapper & Rees, 2003: 306). Whilst Nunan (2004: 98) elaborates that it is essential to focus on a specific feature for attention when conscious raising tasks are designed for learners to perform, Ellis (2005: 9) argues that, especially with adult learners, FonF should be explicit during their language learning development. Moreover, Edward and Willis (2005:16) reiterate that learners who direct their attention to various features of grammar are able to attain adequate levels of accuracy in the target language. Similarly, with the teaching of isiZulu, explicit attention to form will be required at a beginners' level since the structure of isiZulu differs greatly from that of the learner's first and second languages.

This study also investigates the status of FonF relating to a TBLT, CALL syllabus design. It investigates how FonF in communicative tasks can be integrated within the framework of a task-based approach (TBA). As noted, FonF is believed to be the most effective approach for integrating attention to linguistic form into a L2 syllabus. Since the TBA places much emphasis on communication, learners are drawn to focus attention largely on the content and on performing the task and attaining task goals and not on linguistic form (Collentine, 2010; Lee, 2008; Skehan, 2003). However, in a recent study by Skehan et al (2012), it was noted that the simple completion of the task is insufficient; FonF is essential. Within a task-based design, several proposals have been suggested for the incorporation of attention to linguistic form, which are discussed in this study.

The literature review includes a discussion on TBLT related to language for specific purposes (LSP) and computer-assisted language learning (CALL). Regarding LSP theory, numerous studies suggest that a LSP course can be highly worthwhile for L2 learners entering into a specific communal space (Basturkmen, 2006; Belcher, 2006; Chanier, 1996; Dudley-Evans, 1997; Long, 2015 & 2005; Tudor, 1997; West, 1997). Basturkmen (2006: 22) maintains that a LSP course is designed for the purpose of

drawing learners' attention on authentic texts that can be utilized in the target discourse community. Moreover, Hyland (2009: 201) suggests that teaching LSP requires meeting the expectations of specific employer groups in order to be 'work-ready'. In designing such a syllabus, focus should be based on learners' needs, background inquiry and the language usage in these specific environments. Hyland (2009: 203) also suggests that the attention should be placed on the language structures, interaction and conversations that is required in a particular domain. Mere vocabulary, phrases and lexical items as a piecemeal from the real context does not suffice. The communication and interaction can be achieved through speech acts, genres and social interaction as this forms part of the language use in specific purposes.

It is well researched that a task-based needs analysis constructs a foundation for meaningful language learning to take place (Chaudron, Doughty, Kim, Kong, J Lee, Y-G Lee, Long, Rivers & Urano; Whyte, 2013). In addition, recent researchers suggest that synergy between TBLT and CALL in a LSP syllabus is beneficial (Gonzalez-Lloret, 2003; González-Lloret & Ortega, 2014). This could be achieved through a task-based needs analysis, which is essential in identifying language learner's real-world technology-mediated tasks (Park & Slater 2014:96).

This study explores issues related to the incorporations of CALL into the L2 learning classroom, based on SLA theories and CALL methodologies (Doughty & Long, 2003). The study also includes an investigation into the use of TBLT in CALL environment and the rationale for adopting a TBLT, LSP, CALL for SLA. Further investigation undertaken into CALL research methodology includes computer-mediated communication (CMC) and technology-mediated TBLT methodologies proposed by Gonzalez-Lloret and Ortega (2014). Issues relating to input enhancement, FonF and the role of interaction in CALL form part of the discussion as well. The importance of teacher and learner CALL training are also taken into consideration.

The concept of affordances is closely related to CALL, which refers to the possibilities offered by technology (Blin, 2016). The term affordance in relation to CALL considers many aspects such as technological and interaction-design characteristics as well as educational and language affordances. Language learning in a technology-rich environment is complex and dynamic and therefore affords learners diverse opportunities. The inclusion of technology into second language learning and teaching involves a "combination of technological, social and educational affordances" (Blin, 2016: 55).

Furthermore, studies indicate that proper integration of technology has a significant effect on the development of the learners' language skills (Hubbard & Romeo, 2012; Meskill & Anthony, 2010). Therefore, syllabus designers need to ensure that CALL syllabi are designed, implemented and evaluated within the paradigms of SLA principles (Chapelle, 1997 & 1998; Doughty & Long, 2003; Dunkel, 1991; Egbert, Chao & Hanson-Smith, 1999; Garrett, 1998; Hubbard, 2009). In essence, what is required is a well-researched CALL methodology to maximise the effectiveness of incorporating CALL in the L2 classroom and how to promote SLA based grammar development with technologies (Collentine & Collentine, 2015; Gonzalez-Lloret, 2003). Doughty and Long (2003: 36) state that decisions relating to the incorporation of CALL into a L2 syllabus should be directed towards recognised SLA methodological principles; including the use of tasks as units of analysis, providing rich input, focus on linguistic form, opportunities for output and interaction. Skehan (2003: 404) stresses that exposure to input only is insufficient and emphasis should be placed on structured opportunities for learners to focus on linguistic form. However, a recent study claims that language learnt via computer-assisted task-based instruction (CATBI) enhance overall language production as opposed to computer-assisted form-focussed language instruction (CAFFI) instruction (Arslanyilmaz, 2013).

CALL research dates back to the early 1960's (Heift & Schulze, 2015). It has significantly evolved from the earlier 'structural' or 'behavioural' period, through the communicative phase to an integrative period (Hubbard, 1996; McDonough, Shaw & Masuhara, 2013; Thomas & Reinders, 2010; Warschauer & Healey, 1998). Much of CALL research and development during these periods are referred to as 'tutorial CALL' (Heift & Schulze, 2015: 471).

Recent communicative CALL has included the use of computer-mediated communication (CMC) which includes synchronous (real-time chats and instant messaging) and asynchronous (emails, bulletin and discussion boards) in the promotion of language teaching and learning (Levy & Stockwell, 2006; Salaberry, 1996). Moreover, successful implementation of CMC tool in CALL is reliant on well-defined pedagogical objectives, knowledge of the technological options and an awareness of the needs, goals and skills of the learners (Levy & Stockwell, 2006: 9).

In addition to CMC, 'technology-mediated TBLT' has also featured recently (Collentine, 2010; González-Lloret & Ortega, 2014; Park & Slater, 2014; Thomas & Reinders, 2010). Several SLA researchers have emphasized that TBLT could be used as a framework to organise technological design for language learning (Arslanyilmaz, 2013; González-Lloret & Ortega, 2014; Park & Slater, 2014). Both fields of TBLT and CALL seem to share mutual interests (González-Lloret & Ortega, 2014: 3).

This study investigates the ways in which to integrate new technologies with language tasks and how to organize TBLT in L2 CALL syllabus.

As noted earlier, a needs analysis forms the bedrock of any syllabus (Heift & Schulze, 2015; Park & Slater, 2014; Tsai, 2013). In technology-mediated TBLT as well, a needs analysis addresses both the language skills needed to complete the tasks as well as the ‘informational and multimodal digital skills’ required to effectively engage with the technology (González-Lloret & Ortega, 2014: 23). Moreover, a needs analysis assists in obtaining evidence about what innovations and technological tools are most appropriate for the syllabus and inform language teachers about the required training for both students and teachers to be able to use them effectively and successfully.

Research shows that there is diversity in learners and in learner training (Hubbard & Romeo, 2012; Stockwell, 2012). Learner training and the development of autonomy are essential towards further understanding the processes in CALL (Chapelle, 2003 & 2010; Hubbard & Romeo, 2012; Reinders & Hubbard, 2013). CALL can provide numerous advantages for the development of self-paced, autonomous and individualized learning, feedback and evaluation (Chapelle, 2010; Heift & Schulze, 2015; Reinders & Hubbard, 2013; Tsai, 2013; Whyte, 2013).

In addition to learner training, teacher training also needs consideration (Kılıçkaya & Seferoğlu, 2013; Levy, 2000; Son, 2014). Studies reveal that many CALL teachers are either autonomous or social learners (Son, 2014). Stockwell (2012: 3) advises that as there is a diverse range of technologies available, one needs to look at the individual context within which CALL will be used. Factors that need consideration are the learners, mode of instruction, learning goals, the institutional setting, the experience and policies adopted by the teacher (Johnson & Brine, 2012).

The main issue under investigation in this study relates to the use of cognitive complexity and linguistic complexity analysis that inform grading and sequencing of tasks for the purposes of an isiZulu task-based CALL syllabus design for health sciences students. Specifically, the following **research questions** (RQ) addressed in this study include:

RQ 1. How can cognitive complexity and linguistic complexity be analysed in communicative tasks?

RQ 2. Does task complexity facilitate L2 development in isiZulu?

- RQ 3. What are the theoretical properties of reliable selecting, sequencing and grading of tasks in syllabus design and how can this process be achieved?
- RQ 4. What are the principles that guide specific purposes syllabus design, in particular reference to the inclusion of focus on form through CALL?
- RQ 5. How is focus on form incorporated in communicative tasks within a task-based CALL syllabus?
- RQ 6. What are the implications for language instruction regarding the inclusion of a CALL syllabus, with specific attention to complexity and focus of form?
- RQ 7. How can the design properties of CALL learning tasks facilitate input-based instruction, language awareness and learner autonomy?

1.3 Research Methodology

A needs analysis was conducted with health sciences students to identify their communication and technological needs and objectives. Ethical permission to conduct this research was granted by UKZN Humanities and Social Sciences Research Ethics Committee (HSS/110/016), Stellenbosch University Research Ethics Committee: Human Research (Humanities) (SU-HSD- 003117), Department of Health KZN (NHRD Ref: K2_2016 RP52_689) and King Edward Hospital (KE 2/7/1(56/2016). Permission to undertake this study was obtained from all relevant gatekeepers and individual consent received from participating students.

Students registered for the Bachelor of Medicine and Bachelor of Surgery (MBChB) programme at the Nelson R Mandela School of Medicine, UKZN and who were in the clinical phase of their study (i.e. Years 4-6), were requested to be part of this study. A group of twenty students, both mother-tongue and non-mother tongue isiZulu language speaking students were randomly selected to voluntarily participate in the study. Research instruments used in the study were a questionnaire and focus group discussions. Non-isiZulu speaking students were requested to freely share their specific communication needs by completing the questionnaire (see Appendix 1) and by discussing their views about the isiZulu language learning experienced during their first year of study. Considering that the non-isiZulu speaking students have completed a year-long isiZulu course in Year 1 of their study, this questionnaire is important because it reassures learners that the syllabus designer wants to meet their needs and create a course in a manner that the outcomes be attained. This process also helps build on their communicative skills learnt in the first year of study as students consult in their real clinical world. Audio recordings of the discussions were transcribed, and students' responses were collated, from which the main themes were identified. These included instructing patients, conducting a history

taking, examining a patient, prescribing medication and discussing certain medical procedures. Students also indicated the need for vocabulary related to the common illnesses such as diabetes, HIV-AIDS, respiratory and gastrointestinal problems.

The aim of this study was also to identify communication target tasks from which the pedagogical tasks are designed. However, before undertaking this process, clinicians, who are family practitioners, were consulted for their input and expertise on the most common medical conditions experienced amongst patients. Based on the common themes that emerged from students' responses and the list of medical illnesses from the clinicians, the isiZulu-speaking final year students were requested to record or simulate authentic doctor-patient interviews when clerking patients at King Edward VIII Hospital, a public hospital in Durban, South Africa. This particular cohort of students were selected because they had completed three years of hospital rotation and have had the experience of clerking patients. These students simulated eleven communicative tasks, which are representations of real-life clinical settings, with the medical content verified by clinicians. The tasks are considered semi-authentic because they closely resemble interviews that occur between the doctor and patient in the target situation in terms of content and language. Only one communication task (i.e. Task 12) was an authentically recorded task. Due to sensitivity issues concerning the patient, the researcher did not observe the authentic communication task recorded by the student. The data were recorded for the purposes of task design that focuses on discourse between the doctor and patient rather than observing student participation within their consultation. The importance of non-verbal cues during a medical interview are emphasised in the training of communication skills. However, this study focuses on designing the content for the use of simulation in the training of medical doctors. The transcribed version of the simulated/authentic recordings of the doctor-patient interviews were verified by the clinician. It was important for the clinician to validate the content of the dialogues for accuracy and sufficiency and amend any factual inaccuracies. The dialogues were structured accordingly to identify central task types after which were analysed in random order.

The purpose of the analysis was to identify the cognitive complexity and linguistic complexity of the tasks. In addition, the language functions for communicative purposes were also identified. Each communication task is provided a task descriptor and then analysed accordingly relating to the task types (see Chapter 2), Robinson's Cognition Hypothesis (2005) and SSARC Model (2010) (see Chapters 2 and 4) and Foster, Tonkyn & Wigglesworth (2000) Speech Unit Model (see Chapter 4). The communication tasks are also analysed according to the taxonomy model of complexity construct initially proposed by Bulté and Housen (2012) and later modified by Bartning, Arvidsson & Forsberg

Lundell (2015) (see Chapter 4). The aim of analysing the communication tasks as described above, informs the decisions relating to selection, grading and sequencing of tasks and focus on linguistic forms. In other words, the tasks are analysed to identify their syntactic complexity, i.e. sentential, clausal and phrasal levels as well as the language structures used in the dialogues. An illustration is provided (see Chapter 4) describing how tasks can be graded and sequenced in terms of the information obtained from the cognitive complexity and syntactic complexity analyses. Identifying language functions of tasks also forms part of the grading and sequencing process of tasks.

In addition to identifying students' communicative needs, their technological requirements too, needed to be considered. This study, therefore, aims to synergize both TBLT and CALL methodologies within a design-based research framework. The focus relates to how CALL should be integrated into an isiZulu language-learning syllabus. Based on the information obtained from the analyses of the communicative target tasks and the expansive literature review, this study proposes a procedure for an isiZulu task-based CALL syllabus design. In response to the question, how can the isiZulu module be improved, students alluded to having access to isiZulu resources on a digital platform. Responses also indicated that the inclusion of audio and video clips would be beneficial as it would assist in improving listening skills and students would be able to better understand their patients. It is essential for students to continue practising their isiZulu communication skills during hospital rotation in urban and rural hospitals, where many of the patients speak exclusively in isiZulu. To foster their autonomous learning and to gain access to isiZulu resources, the need to include technology-enhanced TBLT becomes more apparent. In technology-mediated task-based language teaching, identifying what innovations, technological tools and training are appropriate for a syllabus design should be considered (González-Lloret & Ortega, 2014). Hence, in an earlier project, the use of video technology proved to enhance isiZulu communication and language and cultural skills (Diab, Matthews & Gokool, 2016). Another study by Singh and Gokool (2018) explored the use of the quiz tool in Moodle as part of the assessment rigour. The current study reinforces these technological advances highlighted in these previous studies and considers the mandatory inclusion of technological tools such as Moodle, which was implemented in 2014 at UKZN. The needs of the institution too needed to be part of the needs analysis. An exemplification is described in Chapter 5 highlighting how tasks can be sequenced when incorporated within a CALL environment.

1.4 Organization of study

Chapter One has presented the aims and rationale of this study. It has also provided a background on how language permeates our daily lives, especially our working lives as healthcare professionals. It has further described that living in a multilingual country like South Africa, language proficiency in an African language is an essential communicative tool. The importance of curriculum transformation and integrating teaching and learning of an African language within the various institutions of South Africa was also described. This chapter also described a procedure for a task-based CALL isiZulu syllabus design that could enhance second language development, improve students' clinical communication skills and foster learner autonomy.

Chapter Two describes three main sections. The first section provides a broad discussion related to key issues concerning TBLT research and syllabus design. It describes the different ways in which TBLT can be incorporated within a syllabus design. It also explores the different types of tasks and describes various frameworks in which tasks can be graded and sequenced. The second section entails an investigation into issues concerning focus on form and the ways in which it can be included in task-based instruction. The last section concerns issues relating to the field of teaching a second language for specific purposes. The discussion relates to the need analysis of learners, language use in specific contexts and the properties of language systems used in these specific courses. Concluding remarks on LSP are provided at the end of this chapter.

Chapter Three provides a broad outline of the key concepts and issues in computer-assisted language learning (CALL) research. It focuses on the inclusion of CALL within a second language learning and teaching approach, particularly on a task-based language specific syllabus. It further discusses various second language theoretical influences that have informed CALL research and practice. This chapter also describes CALL research perspectives after which it investigates the use of task-based language teaching in a CALL environment. It further reviews the framework for technology-mediated TBLT methodology proposed by González-Lloret and Ortega (2014) and methods used for input enhancements (Chapelle, 2003). The role of interaction in CALL and the production in CALL tasks are also discussed. It also describes the different ways focus on form can be incorporated in a task-based CALL methodology. This is followed by a brief discussion on learning autonomy and the importance of learner and teacher training when teaching within a CALL environment. The chapter concludes with an outline of how technology is integrated in the teaching and learning of isiZulu at UKZN.

Chapter Four examines several isiZulu simulated target tasks relating to doctor-patient communication. It briefly discusses the discourse structure associated within clinical communication and describes the Calgary-Cambridge guide used in the communication process for a medical interview outlined by Silverman, Kurtz & Draper (2005). Each communication target task is preceded by a task descriptor and then followed by an analysis of task types according to Pica *et al.* (1993). The dialogues are thereafter analysed according to its cognitive complexity and syntactic complexity (i.e. at all three levels, sentential, clausal and phrasal) in terms of Robinson's Cognition Hypothesis (2005 & 2007), Foster *et al's* (2000) Speech Unit Model and Bulté and Housen (2012) taxonomy of complexity construct respectively. The final analysis relates to the way in which the communication target tasks can be descaled/scaled through the process of decomplexification according to Robinson's SSARC Model (2010). While the concepts of descaling/scaling and decomplexification are closely related, the processes involved differ. The process of descaling/scaling focus more specifically on tasks whereas the decomplexification process refers to specifically the cognitive complexity features to tasks. The last section of this chapter describes an explication on sequencing of target tasks. It is in this section where complex tasks can be descaled or rather its cognitive load could be reduced through the process of decomplexification. The decomplexification process involves manipulating or omitting certain task features provided in Robinson's Cognition Hypothesis (2005).

Chapter Five presents a pedagogical task design for CALL doctor-patient communication in a task-based syllabus. It proposes a procedure for designing a task-based CALL syllabus within a design-based research approach. The procedure is further underpinned by the technology-mediated TBLT framework proposed by González-Lloret and Ortega (2014) . The procedure is based on the information obtained from the four types of analyses completed on the twelve communication target tasks as discussed in Chapter 4.

Chapter Six presents the conclusion of this study. It also describes concluding viewpoints on the design and implementation of technology-mediated TBLT for the teaching and learning of L2 isiZulu for specific purposes. The research questions are briefly addressed in this chapter. Areas for future research in the development of teaching of African languages in the healthcare context based on SLA theories and CALL research is also included.

CHAPTER 2

Key issues in task-based language learning and teaching (TBLT) research

2.1 Introduction

Task-based language learning and teaching is a method that has dominated the field of SLA for over the past two decades. It has influenced syllabus designers, language teachers and researchers by teaching second languages in a communicative, natural way. Several countries have adopted TBLT as a mainstream educational practice (East, 2014; Ellis, 2005a). Adopting a task-based approach requires detail insight and key considerations in the design of a syllabus or curriculum that need to be considered. This chapter comprises of three main parts. The first part discusses the concepts of syllabus and curriculum design as it relates to task-based instruction in Section 2.2. Section 2.3 outlines the theoretical developments in TBLT with a broad overview of its main considerations. Various sub-sections relating to key issues in TBLT are discussed thereafter. In sub-section 2.3.1 different definitions of the concept of ‘tasks’ by leading researchers are provided. This chapter also discusses communicative language teaching relating to TBLT in sub-section 2.3.2. A rationale for advocating task-based language learning and teaching is discussed in sub-section 2.3.3. Research investigations into the central issues pertaining to TBLT, in terms of classification of tasks and the grading and sequencing of tasks are discussed in sub-sections 2.3.4 – 2.3.5. In sub-section 2.3.5, a detailed discussion is provided that describes the grading and sequencing criteria of tasks as advocated by Skehan (1996), Robinson (2005) and Ellis (2003). The second section entails an investigation into issues concerning focus on form (hereafter FonF) and the implementation of tasks. Section 2.4 explores theoretical issues relating to FonF and how linguistic forms can be implemented in a task-based instruction in sub-sections 2.4.2 and 2.4.3 respectively. A brief discussion on the role of the teacher in task-based instruction in Section 2.5 subsequently follows. The frameworks proposed by Willis (1996), Skehan (1996) and Ellis (2003a) for the implementation of a task-based methodology is further described in section 2.6. The methodological principles proposed by Doughty and Long (2003) are also discussed in this section. A brief discussion on task-based assessment is provided in section 2.7.

This study aims to provide a framework for a task-based CALL syllabus for a specific group of students. The health sciences students have been earmarked as the main constituent for this study. Hence, the third section of this chapter entails a discussion on the main perspectives from second language research relating to the design of a specific purposes language syllabus in section 2.8. Sub-section 2.8.1 is further expanded to include discussions regarding the different definitions of the term

‘language for specific purpose’ (LSP) and role of needs analysis in LSP in sub-section 2.8.2. The variants of specific purposes syllabi are reviewed in sub-section 2.8.3. The properties of language systems in specific purpose courses is considered in Section 2.8.5. Issues concerning language use and conditions related to LSP syllabus design is reviewed in sections 2.8.6 and 2.8.7, respectively. Section 2.8.8 describes LSP course design. A discussion on the objectives of a specific course in section 2.8.9 subsequently follows thereafter. Concluding remarks with a summary on LSP is provided in section 2.8.10. This chapter concludes with the main findings from research relating to designing and teaching task-based language learning and specific purpose syllabus in section 2.9. It also advocates how TLBT and LSP are suitable approaches for the teaching and learning of L2 isiZulu in a health sciences syllabus.

2.2 Syllabus and curriculum design related to task-based instruction

This section investigates the different research perceptions on syllabus design in TBLT. It also discusses some current discussions relating to TBLT. The various types of communication tasks are explored, and a comprehensive outline of each type is examined. In addition, the section examines proposals from research concerning the way tasks are graded and sequenced in TBLT methodology and how FonF instruction should be included in a task-based syllabus.

To understand the procedure of a syllabus design, it is vital to review some prominent deliberations between the terms syllabus and curriculum. According to Richards (2001: 2) syllabus design refers to one component of curriculum development. It specifies the learning content of a course of instruction and provides an inventory of what will be taught and assessed. Curriculum development, on the other hand, entails a broader, detailed process than syllabus design. It comprises several components such as identifying the requirements of a group of learners, the development of goals and objectives for a program to cater for those needs, identifying a suitable syllabus and teaching methods as well as appropriate assessments of the language program.

Different perspectives on curriculum and syllabus design have been put forward. Nunan (2004: 4) refers to a curriculum as a complicated concept with various viewpoints. It can refer to a specific curriculum, i.e. a language curriculum or at times used interchangeably with ‘syllabus’. Nunan (2004: 6) holds three different views on curriculum, i.e. curriculum as a plan, an action and an outcome. The ‘curriculum as plan’ concerns the set procedures and inventions planned before the actual teaching process such as lesson plans, syllabuses, teaching material and additional resources. Nunan (2004)

explains that the curriculum as plan contains three features. Firstly, it consists of syllabus design that relates to the selecting, sequencing and justifying learning content. Secondly, it consists of a methodology that involves a process of selecting, sequencing and justifying learning experiences. The third feature refers to assessment that involves the selection of assessment instruments and assessing procedures. Nunan (2004: 6) states that although this view on curriculum blends well with traditional approaches to curriculum, it is challenging to differentiate between the two concepts of syllabus design and methodology due to the rapid advances in communicative language teaching.

In comparison to Nunan's view on curriculum, Graves (2008: 152) provides a different view on curriculum as one that involves three core curriculum processes, i.e. planning, implementing and evaluating. Larsen-Freeman and Freeman (2008) cited in (Graves, 2008) views curriculum as a dynamic, complex system with interconnectedness, nonlinearity and constant change. According to Graves (2008: 159) there are variants in the meaning of syllabus. At a restricted level, syllabus refers to the specifications of the course content and the organised structure in which the content will be taught. The wider meaning of syllabus in language teaching includes the specific way to theorize a language and how language is learned to select and prepare teaching material for classroom instruction. Hence, the emergence of grammatical syllabus, notional-functional syllabus, content-based syllabus and task-based syllabus.

Recent focus on curriculum and syllabus leads to Richards' (2013: 6) view on the term curriculum which refers to a broad overall plan for a course and a "blueprint for teaching and learning" that outlines the learning outcomes that is to be attained. The dimensions of curriculum include an interrelationship between input, process, output, syllabus, methodology and learning outcomes. Richards (2013) examines three curriculum design strategies, i.e. forward, central, backward design. Each of these designs include these three elements of input, process and outcomes. Forward design commences with preparation of a syllabus, then methodology, followed by learning outcomes assessment. Issues related to syllabus content and sequencing are important matters dealt with in forward design. Richards (2013) mentions that it is a preferred design option adopted in mainstream teaching with large class sizes. Teachers, who may have limited opportunities for professional development, depend mostly on textbooks and mandatory curriculum instead of resources designed by teachers. Richards (2013) cites the following examples as forward design approaches to language teaching, namely, communicative language teaching and content-based language teaching. Classroom processes and methodology are issues dealt with in central design. Richards (2013) states that syllabus and learning outcomes issues are usually taken into consideration as the curriculum is implemented.

Unlike the forward design, the teacher need not follow a syllabus prescriptively. They are given autonomy and control over the teacher learning process. According to Richards (2013) typical examples of central design include teaching methods such as the Natural Approach, the Silent Way and some versions of task-based language teaching approaches. The central design version of TBLT uses pedagogic tasks as the source for classroom instruction (Richards, 2013: 17). The last strategy of curriculum design is the backward design, which begins with specifications of learning outcomes. These specifications are then utilised as the basis for decisions on methodology and syllabus developments. An example of backward design would be an example of a second version of TBLT. With this version of TBLT, Richard (2013: 23) points out that a needs analysis is the primary source for curriculum development. Needs analysis is used to identify a list of target tasks, which learners are required to be proficient in the specific target language. In addition, this particular design is used when accountability needs form the basis of the curriculum design as well as in cases where resources are committed to needs analysis, planning and materials development. A well-known example of the backward design approach is the Common European Framework for Reference for Languages (CEFR). Richards (2013: 26) cites this framework as providing a description of objectives, content and methods implemented for the study of languages. Regarding language teaching curriculum, Richards (2013: 28) emphasises that “there is no best approach to curriculum design” and points out that the success of each of the design strategies is dependent in the context in which it is implemented.

Having reviewed the distinction between syllabus and curriculum above, this study leans towards a backward design that incorporates the second version of TBLT. It does so because this study considers the language and technological needs of a specific group of students, i.e. health sciences students as the starting point in the syllabus design process. It further comprises an inventory of target tasks (see Chapter 4) which students will need to learn, to simulate the doctor-patient interview in isiZulu, which can be seen as approximations in language proficiency.

In conjunction with the backward design approach, syllabus design as used in the field of TBLT, concern the “selection, justification and sequencing of linguistic and experiential content” (Nunan, 1991: 55). Syllabus design also requires a real-world rationale, which allows tasks to be related to the things, which learners can do beyond the classroom. Robinson (2013: 1) points out that syllabus design refers to decisions based on units of classroom-based activities as well as the decisions that need consideration when sequencing these activities for learners. The concept of syllabus is essentially used to validate the content. According to Robinson (2013), the learner plays a key part in the design of a syllabus as the selection of tasks for a syllabus is based on task-based needs analysis. Syllabus design

may adopt any of the options in the units. The units found in a syllabus design can be constructed on the language that needs to be learned in terms of the linguistic elements, namely linguistic and vocabulary items. These elements can be subsequently sequenced that correspond to their difficulty and frequency, respectively. Units may be further created on the analyses of language elements, which are in turn graded from simple to complex components. Finally, units can be centred on communicative and performative skills of a language. Willis and Willis (2008) reiterate the above views by stating that syllabus design is a dynamic process whereby constant monitoring and refining of materials need to take place. For a TBLT syllabus to be successful, all constituents need to be cooperative. Essentially, syllabus design consists of learner needs, specific target tasks, and task sequences to create a syllabus and a monitoring and redesigning process (Willis & Willis, 2008).

2.3 Theoretical developments in task-based language learning and teaching

Since the 1980s, TBLT has received considerable support as a theory of language teaching and learning in the field of SLA and ISLA, which is a broad research area that has influenced syllabus design, materials development and teaching methodology. It also concerns the design of tasks, with attention to how different design features of tasks effect language production, cognitive processes and learning outcomes in unique ways (Benson, 2015; Nunan, 1989 & 2004; Ortega, 2005; Oura, 2001; Park & Slater, 2014; Pica et al., 1993; Skehan, 1996; Willis & Willis, 2008; Yousefi et al., 2012). In recent studies of ISLA, which is a sub-field of SLA, TBLT has also been featured as an approach that influences learning processes such incidental and implicit learning, cognitive processes and methodological principles (Loewen & Sato, 2018; Long, 2017; Van Patten, 2017).

The principles of TBLT support the practice of meaningful real-world tasks as it acts as the ideal promoter of experiential learning. Experiential learning is an essential conceptual basis in TBLT whereby learners are actively involved in the sequence of communicative tasks (Nunan, 2004: 12). In support of this view, Ellis (2014) maintains that much of the learning in TBLT is actually incidental language learning and not intentional. As TBLT is a method and pedagogical approach that encourages learning by doing, learners learn language by being active participants when doing relevant, meaningful and engaging tasks that stimulate their interests and keep them focussed (Benson, 2015). In other words, implementing the use of tasks as a key element in a classroom affords an active learning context for learners that can eventually lead to enhancing the acquisition process and stimulating L2 learning.

Nunan (1991: 279) highlights five characteristics of a task-based approach to language teaching. These include:

- An emphasis on learning to communicate through interaction in the target language;
- The introduction of authentic texts (teaching materials) into the learning situation;
- The provision of opportunities for learners to focus not only on language but also on the learning process itself;
- An enhancement of the learner's own personal experiences as important contributing elements to classroom learning;
- An attempt to link classroom language learning with language activation outside the classroom.

Research has shown that when learners engage in conversational interaction and negotiation of meaning, then L2 acquisition results (Ellis, 2003a & 2005b; Krashen, 1982; Long, 1981). The critical point is that engaging learners in interaction is effectively achieved through the use of tasks (Lee, 2000). Providing students with ample opportunities to use the target language in the classroom confidently is one of the most important elements of TBLT (Willis & Willis, 2008: 2).

TBLT also emphasises reliable selecting, grading and sequencing of tasks to assist learners to build on prior knowledge and focuses on authentic tasks which the learner will need to perform in the real world, as opposed to pedagogic tasks (Nunan, 2004: 1-6). Empirical studies have shown that accurate task sequence and complexity have significant effects on learners (Madarsara & Rahimy, 2015; Yousefi et al., 2012). Further discussion on selection, grading and sequencing of tasks is revisited in Chapter 4.

2.3.1 *What is a 'task'?*

The definition of task is multifaceted. According to Edwards and Willis (2005: 17), there appears to be “no single definition of tasks”. The reason for the differences is due mainly to the fact that the study and description of task has been approached from diverse perspectives and for various purposes. In this section, an overview of some of the prominent definitions taken from literature on task-based teaching is given, thus providing an insight into what TBLT involves and how it has evolved over the past years.

An earlier definition of task proposed by Long (1985) refers to “a piece of work undertaken for oneself or for others, freely or for some reward”. Essentially, the concept ‘task’ applies to the “things people

do in everyday life, at work, at play and in between” (Long, 1985:89). Tasks are everyday chats that people share about or things that individuals will tell you to do if you ask them.

According to Nunan (2004: 2), the above definition is “non-linguistic” as it refers to the kinds of things that people would say if asked what they are doing. Therefore, it does not relate to the study of language and the grammatical components of the language. Nunan (2004: 4) maintains that it is pedagogical tasks that “involve learners in comprehending, manipulating, producing or interacting in the target language while their attention is focused in mobilizing their grammatical knowledge in order to express meaning”. A key element highlighted in Nunan’s definition is that emphasis should be placed on meaning instead on grammatical form.

However, Long and Crookes (1993) maintain that there must be a link with real-world contexts of language use and language need. These non-linguistic features of the target tasks are the basis of sequencing decisions, which can be further classified into general task types. For instance, in the case of the current study, gathering patient’s personal history, family history, past medical history and present medical condition can be categorized as the ‘conducting a history taking’ category. Once tasks are classified, they can be selected and sequenced to form pedagogic tasks that are graded from simple to complex to create a task-based syllabus (Long & Crookes, 1993: 39-40). In a recent contribution to TBLT research, Long (2015: 6) stresses that ‘task’ is the unit of analysis that is included throughout the development, implementation and assessment of a TBLT design. Using task and not text as the unit of analysis in a task-based approach also constitutes one of the methodological principles of instructional design features, according to Long (2015).

From a classroom interaction perspective, Willis (1996: 23) defines tasks as “activities where the target language is used by a learner for a communicative purpose (goal) in order to achieve an outcome”. Willis also suggests that language use in tasks should focus on exchanging meanings not language forms. In keeping with Willis’ definition, Prabhu (1987: 24) defines task as “an activity which requires the learners to arrive at an outcome from given information through some process of thought, and which allowed teachers to control and regulate that process”. Prabhu’s definition also alludes to the fact that cognitive processes are involved when performing a task, which is a key aspect in tasks. Skehan’s (1998) definition of task emphasises the importance of meaning and proposes five key elements of a task. According to Skehan (1998: 95), “a task is an activity in which

- Meaning is primary;
- There is some communication problem to solve;
- There is some sort of relationship to comparable real-world activities;
- Task completion has some priority; and
- The assessment of the task is in terms of outcome.”

Skehan’s definition suggests that learners should be creative in generating their own meanings and not simply repeating utterances by someone else. Successful task completion is dependent on the outcome and tasks performed in a language classroom should resemble the real world. Long and Crookes (1993: 39-40) provide a clear understanding when differentiating between real world target tasks and pedagogic tasks. Real world target tasks refer to tasks that are done daily by learners beyond the classroom, in the real world by using the L2. Real-world tasks maybe needed for academic, vocational training or occupational purposes.

Ellis (2003a: 1-10) maintains that different approaches have been proposed for ‘tasks’ by the various researchers. Definitions seem to vary according to six dimensions. These include the scope, perspective, authenticity, linguistic skills, cognitive processes and outcomes related to tasks. There appears to be a variety of definitions regarding the scope of the task. First, Long’s definition is broad and clear in scope as it aims at the authenticity of tasks, i.e. tasks that may be performed by learners outside the classroom in the real world. Nunan’s definition is much narrower; its emphasis is placed on pedagogical tasks, which aim only at ‘interactional authenticity’. In other words, these tasks provide natural use of language but do not relate to real life happenings. As cited above, Skehan’s definition, also highlights that tasks should have ‘some sort of relationship to comparable real-world activities’.

Concerning perspective, some tasks are seen either from the vantage point of the language learner or viewed from the perspective of the task designer. Most of the definitions stem from the perspective of the task designer. Whilst Breen (1987), cited in Nunan (2004: 3) mentions that a task refers to ‘any structured language learning endeavour’ and a ‘range of workplans’ that aims to engage learners in meaning-focused language use, others refer to tasks as ‘a piece of classroom work’ and ‘an activity’. Regarding authenticity, tasks should be connected to activities that occur in the real world. Long’s definition on task explicitly states that tasks should be real-world activities that people do every day. Ellis (2003a: 6), on the other hand, views tasks that are situationally authentic or interactional authentic. In other words, there are occurrences where tasks used in a language classroom, are not

actually real world such as telling a story or locating places on a map. Although these tasks may not be used in real life, they do have some connection to the real world.

With regard to language skills, earlier definitions on tasks did not focus on any specific language skill needed for task performance. However, Long (1985) points out in his definition that there should be both oral and written activities when performing a task. Whilst some research specifically focus on oral skills, Ellis (2003a: 6) maintains that all four language skills (i.e. speaking, listening, writing and reading) are required for performing a task.

The cognitive dimension of tasks was featured exclusively in the definition offered by Prabhu. Prabhu's definition emphasised that learners undergo a process of thought and reasoning during task performance. Ellis (2003a: 7) supports this view by arguing that cognitive processes include selecting, reasoning, classifying, sequencing information and transforming information. The nature of cognitive processes involved in performing a task also relates to Robinson's view on cognitive complexity of tasks. It is important to consider the cognitive processes within the definition of tasks as they can differ in terms of its complexity and on the cognitive demands placed on learners.

An overarching feature of tasks prevalent in most of the definitions is that the tasks must result in a clear outcome aside from the language use, which is essential in performing a task. This clearly indicates that emphasis should be placed on meaning rather than on linguistic form, which has also featured commonly as one of the definitions of task. The fact that tasks have a clear outcome together with meaning-focused language use set them apart from 'exercises'. Exercises are simply activities that focus exclusively on language use.

Ellis (2003a: 16) adopts the following definition of 'task':

“A task is a workplan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed. To this end, it requires them to give primary attention to meaning and to make use of their own linguistic resources, although the design of the task may predispose them to choose particular forms. A task is intended to result in language use that bears a resemblance, direct or indirect, to the way language is used in the real world. Like other language activities, a task can engage productive or receptive, and oral or written skills and also various cognitive processes.”

Within his definition, Ellis (2003a: 9-10) identifies six criterial elements for a task that have been previously outlined in other definitions. The first feature is that tasks are viewed as a ‘workplan’, a similar stance to that of Breen cited earlier. Secondly, Ellis argues that meaning is the primary focus of the task. Tasks should aim to provide real meaning engagement and not simply for the purposes of producing and displaying target language features. Thirdly, Ellis infers that tasks should resemble activities performed in the real world, which relates to Skehan’s proposed definition. In the fourth instance, Ellis refers to tasks as having a ‘clearly defined communicative outcome’. The fifth feature of the definition by Ellis includes reference to the cognitive processes that are involved in task performance. Finally, all four language skills (i.e. writing, reading, listening and speaking) could be targeted in tasks which Ellis refers to as ‘productive or receptive and oral or written’.

According to Ellis (2003a) a further distinction can be made with the following types of tasks such as:

- **Open versus closed tasks**

With open tasks, learners are aware that there is no clear-cut explanation. Open tasks refer to opinion gap tasks such as surveys, debates and general discussion. Learners are open to free discussions and are at liberty to decide on a solution. Closed tasks, however, require participants to reach a single, correct solution such as in the case of information gap or same-or-different tasks.

- **Focused and unfocused tasks**

Ellis (2003a: 16) points out that focused tasks have two purposes in task-based methodology, namely to encourage communicative language use and to target the use of a specific defined language feature. For tasks to achieve a focus, tasks can be designed in a manner that requires learners to use a specific grammatical item. Moreover, a task can be designed by making the language itself the content of a task. Unfocused tasks are created with no usage of a particular language feature in mind. The rationale for the inclusion of focused tasks is discussed in Section 2.3.5.

- **One-way versus two-way tasks**

These tasks are required information exchange tasks that are differentiated by the information that is to be shared is split one way, i.e. a communicative task where either one participant holds the information or two or more people (Ellis, 2003:88). A one-way task could be a listen-and-do task where the teacher holds all the information that needs to be communicated, thus placing stress on the

learner to complete the task. A two-way task, on the other hand, all learners are required to participate to achieve the outcome of the task.

- **Target tasks (real-world tasks) versus pedagogic tasks**

Similar to Long and Crookes's distinction between target tasks and pedagogic tasks noted above, Nunan (2004) too, differentiates target tasks as referring to uses of the language in the world outside the classroom and pedagogic tasks that occur in the classroom. According to Ellis (2014: 104), real-world tasks are the actual tasks that learners may have to perform in real life such as making a hotel booking as they aim for situational as well as interactional authenticity. Pedagogic tasks focus on interactional authenticity only. In other words, although they do not match to real-life events, they are able to produce natural language use such as in the typical example of spot-difference. Long's interpretation of real-world communicative activities is that these tasks make up the target tasks for the specific group of learners that are identified in the initial stage of a task-based needs analysis (Long, 2016: 6). Long (2016) explains that samples of spoken or written language use by first language speakers engaged in the target tasks are modified and elaborated and not simplified. These versions of samples form task-based materials called pedagogic tasks, which are used for the course (Long, 2016: 7). The pedagogic tasks provide learners the language they will require in performing real world target tasks. In other words, the pedagogic task is the main feature that aim to provide the means where both teachers and learners actually work on in a classroom setting. Given that pedagogic tasks form the basis of instructional materials for TBLT, a string of gradually more complex pedagogic tasks is required. In other words, pedagogic tasks are sequenced from simple versions to 'progressively more complex approximations to the original target tasks' (Long, 2016: 7).

The explanation of tasks provided by both Ellis (2003a) and Long (2015) are considered for the purpose of this study. The emphasis placed on real world tasks by Long is an ideal platform for implementation in a LSP syllabus. The incorporation of tasks in a LSP syllabus is reviewed in the latter part of this chapter in Section 2.8.

2.3.2 Communicative Language Teaching (CLT) in TBLT

This section provides a broad overview on the perspectives of CLT in TBLT. According to Nunan (2004: 6) everything that is done in the class is supported by the 'nature of language, nature of learning process and the nature of the teaching act'. Nunan (2004: 6) states that language is understood beyond grammatical rules and a set of vocabulary to be memorized. Essentially, language has evolved into a

dynamic resource for the creation of meaning. Learning is not regarded as a process of habit formation any longer but rather seen as social process in recent times. Learners together with the cognitive process they engage in are also regarded as vital to the learning process. Language can be understood as a resource for communication instead of “sets of phonological, grammatical and lexical items to be memorized”, thus leading to the notion that different learning programs can be developed to reflect the different communicative needs of distinct groups of learners (Nunan, 2004: 7). Thus, over the last two decades, according to Nunan (2004) the communicative approach to language teaching has been in the forefront of L2 teaching. The rationale for the success of the communicative approach was that learners would acquire a language through engaging in meaningful real communication contexts. Learners are not simply provided with the structural formation of the language but instead with opportunities to interact and negotiate meaning in the language via communication tasks.

In the last thirty years, CLT has developed and expanded into various well-established pedagogic approaches such as the notional-functional approach and oral-situational. Along with these versions, other various classroom techniques and activities have also developed. One such technique has led to the development of the use of tasks that engages learners in real language use in classrooms, thus the emergence of a task-based approach to L2 learning. Ellis (2003a: 27) states that there are two ways of using tasks; either through task-supported language teaching or task-based language teaching. Essentially, TBLT is a development on CLT, which places emphasis on the task designs and the development of task-based teaching (Willis & Willis, 2008: 11). According to Ellis (2005a: 7), a task-based approach to language teaching requires a syllabus to be based on holistic tasks, it is a ‘deep-end’ approach and activities involve interactional authenticity. Moreover, TBLT is an alternative approach to other traditional methods of language teaching that is learner-centred and provides an experiential pedagogical model (East, 2014: 261). This section explores the role of TBLT in the context of communicative second language teaching.

In CLT, the terms ‘weak and strong’ are generally used to distinguish the different approaches, according to Littlewood (1981) as cited in Nunan (2004: 9). Weak versions of communicative language teaching can be compared with more traditional approaches of teaching, whereby lessons are taught in isolation and emphasis placed on the structural forms of the language. Ellis (2003a: 28) views this approach as ‘interventionist’ and ‘analytic’. Examples of weak versions of CLT include the notional and functional approach. Their weakness lies in the structural method it follows; language functions (such as wishing and requesting) and notions are identified through categories and are taught in

isolation. Learners are then exposed to the language system through communicative activities upon acquiring the grammatical forms of the language.

The strong versions of communicative language teaching is seen as 'non-interventionist' and 'holistic' as learners are given the opportunities to explore how language is used in communication instead of identifying specific language structures (Ellis, 2003a: 28). Essentially, language is learnt through communication. The Natural Approach by Krashen and Terrell and TBLT are typical examples of strong versions of CLT. It is evident from this viewpoint that CLT has developed from more traditional, analytical patterns to L2 teaching such as the notional-functional syllabus to the more recent, holistic approaches such as TBLT.

The notions of 'weak' and 'strong' forms have also been extended to the task-based approach to L2 teaching. Ellis (2003a: 28) refers to 'weak' and 'strong' task-based instruction as 'task-supported language teaching' and 'task-based language teaching' respectively as alternatives. Skehan (1996: 39) maintains that strong forms of task-based instruction include task as 'the unit of language teaching, and that everything else should be subsidiary'. From this perspective, strong versions of task-based teaching implement tasks as the unit of syllabus design to enhance language development. The reasoning toward strong forms of task-based teaching is that communication and more importantly, negotiation of meaning during task performance will provide learner opportunities to develop their interlanguage and eventually to acquire the target language. With weaker versions of task-based instruction, the use of tasks is seen as an essential component of instruction; however, these tasks function around complex linguistic content. Littlewood (1981) cited in Skehan (1996) asserts that weak versions of task-based instruction closely resembles the traditional presentation-practice-production (PPP) format. While weak forms of task-based instruction may be placed on the middle of the strong-weak range of communicative language teaching, strong versions can be seen on the strong end of the CLT pendulum.

2.3.3 Rationale for task-based language teaching

Various second and foreign language-teaching settings have successfully implemented task-based language syllabus over traditional syllabus types such as the PPP approach. This approach involves three stages for teaching a new language. The first stage of presentation usually focuses on a new form or structure, often presented explicitly in a context or via a text. This stage is followed by practice stage where the new form of structure is practised through its systematic use. At the final production

stage, learners are required to replicate the target form or structure (Edwards & Willis, 2005). Even though the PPP approach, now considered outdated with many communicative language teachers, provided secure teacher roles and teacher training and clear accountability, it has been viewed as ‘a discredited, meaning-impoverished methodology’ (Skehan, 1998: 94). Therefore, an alternate approach to L2 learning and teaching that was theoretically sound and practically viable, was needed. This section provides a rationale for adopting of a task-based syllabus as the more preferred approach to the traditional ones.

The variety of traditional L2 syllabus types is often referred to as ‘synthetic’ or ‘interventionist’ syllabuses (Long & Crookes, 1993). A structural syllabus is organized in terms of linguistic structures. The different language structures were simplified and presented to learners individually in order to gradually increase complexity, as a piecemeal until all of the language structures had been learnt. Because of such types of syllabus, learners did not acquire knowledge on how to use the language but rather focused on knowledge about the language forms and structures. Little attention was given the focus on communication.

Frequent failure and disappointment of using structural syllabuses led to the development of more communicative methods such as the notional and functional syllabuses. Although seen as synthetic and interventionist, these syllabuses did not introduce the language separately but instead provided a list of language functions in terms of notions (e.g. time, place, quantity) and functions (e.g. exchange of greeting, requesting, offering). Widdowson (1978) cited in Long & Crookes (1993: 16) confirms that a notional-functional syllabus is an upgrade to structural ones as the target language is used in a more authentic setting and the ‘communicative value’ is evident. Similarly, Ellis (2003a: 207) maintains that the functional-notional syllabus was no more effective than structural syllabuses however it did aim to cater for the learners’ communicative needs. Baralt, Gilabert & Robinson (2014b: 3) note that proposals for structural syllabus design were not supported by empirical research and did not provide any evidence-based claims for judging whether these proposals influence learning and performance in L2 syllabus. According to Keck and Kim (2014), many language teachers rejected grammar instruction entirely and opted to use authentic, meaning-focused, communicative tasks, as communicative competence is the goal of L2 pedagogy.

Other less widely used synthetic syllabus types included situation and topic as their unit of analysis. Within these syllabuses, the units were structured to include everyday situations (e.g. at the supermarket) or topics (e.g. shopping). However, these syllabuses proved to be ineffective as well

because situations were found to be too extensive to be used in identifying learner needs and developing materials. In addition, an inventory of linguistic items or functions and notions for each situation or topic was an important part of this syllabus (Long & Crookes, 1993). The ‘communicative’ syllabuses mentioned above have received much criticism and even rejection for achieving unsatisfactory results and for lacking theoretical evidence. They clearly do not involve a psycholinguistic process into language learning in that preselection of linguistic forms ignores the cognitive processes believed to be a vital element in interlanguage development. Since the above syllabus types simply failed at activating L2 acquisition in learners, other different kinds of task-based syllabuses emerged such as the procedural, process and task syllabuses.

The procedural syllabus is related to the work of Prabhu (1987). In his experimental project, second language teaching was teaching through communication and not for communication. Prabhu’s procedural syllabus included no preselection of linguistic items but rather learning content was identified by ‘holistic units of communication’, namely tasks (Ellis, 2003a: 208). The outcome of a task was achieved through learners tapping into their own cognitive abilities. The aim of this kind of syllabus was to provide learners sufficient communication opportunities through which they could then acquire linguistic structures. Focussing on meaning rather than on form was the key component in a procedural syllabus.

The term ‘task-based syllabus’ has become a broad concept relating to a variety of syllabus designs using tasks as the main establishing principle. A vital argument in support of the adoption of a task-based syllabus is that the use of ‘tasks’ is associated with psycholinguistic processes evident in second language teaching (Skehan, 1996). Similarly, Long & Crookes (1993) maintain that the adoption of tasks serves as an ideal unit for identifying learners’ needs for the design of a specific purpose task syllabus. It should also be compatible with the findings of L2 classroom research as well as with the principles of course design.

Pica et al. (1993) have also supported the implementation of communication tasks in the processes of L2 learning. These researchers stress the significance of interaction in the use of communication tasks in language teaching and learning. In addition, Pica et al. (1993) argue that tasks are appropriate tools for affording opportunities for negotiation of meaning, which is understood to enhance acquisition developments.

Ellis (2003a: 209) based his arguments regarding the rationale for a task-based syllabus on the following three points. On the first point, task-based syllabuses are seen from a theoretical standpoint. In other words, it is assumed that task-based instruction is coordinated with the cognitive processes evident in L2 acquisition. Secondly, learner involvement is emphasised in task-based teaching. It has been argued that tasks afford learners ideal opportunities for engagement on a cognitive level. Using tasks based on real-world needs and experiences motivates learners even further. The third point of argument relates to tasks serving as suitable units for specifying learners' needs, hence making tasks the ideal unit for the design of specific purposes syllabuses. Further discussion on language for specific purposes is provided in Section 2.8.

Similar to Ellis' rationale for TBLT, Long (2015: 7-14) provides a set of criteria that TBLT measures up to. Firstly, TBLT has been consistent with theories of SLA and research findings on how people learn a second language. Secondly, it is based on philosophical principles and psycholinguistic foundations of education. Principles that represent social values such as educating the whole person, learning by doing, learner-centredness and equal participation among all students are included in TBLT. Moreover, promoting learning by doing constitutes one of the methodological principles advocated by Long (2015). The third criteria is that TBLT invokes accountable language learning. Educational systems in either schools or universities should be accountable and responsible for providing opportunities for students to learn a L2 to communicate in specific local communities upon exiting the institution. This point resonates with the mandatory inclusion of learning isiZulu at UKZN. Fourth, closely linked to the increasing demands of accountability is the need for relevance in TBLT. Long (2015: 11) consistently argues that language courses that overlook needs analysis are at risk of wasting time and money of all stakeholders. He emphasises that need analysis is an important precursor to any language course. To develop well-designed L2 courses, it is essential that programs be relevant and valuable to all clients, particularly the learners. However, the issue of needs analysis has been contentious. In a recent article, Ellis (2017) contends this approach to developing a task-based syllabus, stating that it is problematic. Ellis (2017: 509) argues for both the needs and wants of learners to be addressed and not just their functional needs in good language teaching practice. Ellis (2017) refers to Bachman (2002) who also disapproves a needs-based approach stating that it is not always applicable. A fifth criterion is that TBLT is known to include FonF to handle difficult language structures. It also provides many opportunities for intentional learning thereby enhancing the learning process. The sixth criteria is that the 'real' meaning of learner-centredness is addressed in TBLT. Taking into consideration, the following vital elements of conducting needs analysis with students, attending to language form in a reactive manner, allowance on logistical constraints and individual differences

constitute the learner-centredness criteria. More discussion on individual differences is to follow in section 2.3.5.2. The last criteria of functionality is embedded in TBLT. Functional language abilities are required for any purposes, academic, vocational, or social survival purposes.

Based on the various standpoints for the promotion of a task-based approach to language teaching, the benefits of this approach are clearly emphasised. Despite being theoretical in nature, the task-based approach still dominates the research in second language learning and teaching. Further consideration to the design of task-based syllabuses is described in sub-section 2.3.4. In addition, this section provides an overview of why tasks are viewed as best opportunities to SLA. Further explication on how tasks can be cognitively manipulated to create ideal platforms for SLA is also provided.

2.3.4 Classification of tasks

Various frameworks on the taxonomies of tasks have been suggested for the classification of task types. With such a vast option of task types available to syllabus designers, it can be rather challenging for the design of task-based courses. In this section, a synopsis of the various kinds of tasks and classification systems is provided.

Task classification has a significant impact on the design of task-based syllabi. As indicated by Ellis (2003a: 211), it offers a broad list of task types for syllabus designers to choose from, ensuring that they incorporate a variety of tasks within their course. With an extensive list at hand, syllabus designers can select appropriate tasks that are suitable to the particular needs of a specific group of learners. It also provides an opportunity for experimenting with various task types to identify which task types will be most suitable in specific teaching environments. The abovementioned benefits are essential for both research and teaching to be executed efficiently. Ellis (2003a: 211) identifies four approaches in classifying tasks, namely, pedagogic, rhetorical, cognitive and psycholinguistic classifications. Each of these approaches are discussed in turn.

2.3.4.1. Pedagogic Classification

The pedagogic approach to task classification, proposed by Willis (1996), refers to tasks based on activities and operations that learners are likely to complete during the performance of tasks. The types of tasks that learners may encounter could include, *inter alia*, list, compare, sort and order or solve a

problem or share personal experiences or could even include a variety of tasks in order to complete several stages of a task required for creative tasks or projects (Ellis, 2003a: 211-212).

2.3.4.2. Rhetorical Classification

This approach to classifying tasks is based on rhetoric theories that differentiates the variety of discourse patterns in line with their structure and linguistic properties such as narrative, instructions, descriptions and reports (Ellis, 2003a: 212). One of the benefits of this type of classification can be seen in specific purposes course design whereby learners' specific needs can be easily identified in terms of the particular domains they will need to acquire at some later stage upon using the target language.

The concept of 'genre' is supported by Ellis as a more useful alternative for the classification of tasks (Ellis, 2003a: 212). The term 'genre' is referred to as a group of communicative events where similar communicative purposes, structures and styles are shared amongst all. Some of the genres could include recipes, research articles and medical consultations (Swales, 1990 as cited in Ellis, 2003a). The use of tasks can be the ideal pedagogic tool for teaching genre, as long as the task includes an authentic communicative purpose.

2.3.4.3. Cognitive Classification

With cognitive classification of tasks, the performance of cognitive operations with different task types are involved in creating a typology. In Prabhu's Bangalore Project (1987), three main types of tasks were used to describe the cognitive classification of tasks. They were the information gap tasks, which typically refers to the transfer of information from one learner to another. In order to meet the criteria set out for this type of task, cognitive operations would involve encoding and decoding information from or into language (Ellis, 2003a; Nunan, 2004).

A second task type refers to a reasoning-gap activity, which involves cognitive operations such as inference, deduction and practical reasoning. Prabhu (1987) states that this activity not only shares information, but it also requires further comprehension to take place. Examples of this type of task consists of working out a map or timetable. The third type of task referred to the opinion-gap activity, involves identifying and articulating personal preferences, feelings or attitude in response to a given situation (Nunan, 2004: 57). Prabhu (1987) points out that thoughts and logic could create language

learning thus the adoption of a cognitive approach to task classification. Willis & Willis (2008) maintains that cognitive classification is more specific and generative as a tool for teachers to use.

2.3.4.4. *Psycholinguistic Classification*

The psycholinguistic typology of tasks is based on a classificatory framework proposed by Pica et al. (1993). This psycholinguistic classification of tasks is informed by the interaction hypothesis and aims to classify tasks relative to their potential for language learning (Ellis, 2003a: 214). In other words, it affects the opportunities learners must comprehend input, acquire feedback and then to adjust their output. According to Pica et al (1993), the typology of communicative task types are organised into four categories, namely, interactant relationship, interaction requirement, goal orientation and outcome options.

The first category refers to the interactant relationship, which relates to the responsibilities given to the participants to hold, request and supply the information to attain task goals. It also distinguishes between one-way or two-way tasks. In other words, if one participant holds all the information, then the communication results in one-way. However, when both participants hold information, request and supply information, then two-way communication will be the result. Within this mutual relationship, negotiation of meaning is likely to happen. The second category refers to interaction requirement, which is concerned with the design of the task. The interaction requirement allows participants to request and supply information. Interaction can be optional if participants choose not share information, in which case limited information is exchanged. If all participants in a task are required to request and supply information, then this is assumed to lead to negotiation of meaning and more interaction (Ellis, 2003a: 215; Pica et al., 1993).

The third category refers to goal orientation of the communication and goal component of the framework. Goal orientation refers to task goals, which are achieved through a single outcome (convergent goal orientation) or whether participants can work towards multiple outcomes to the tasks (divergent goal orientation). Pica et al. (1993: 15) refer to outcome options as the fourth category. Various acceptable tasks outcomes are available to participants. A typical example of task in this category would be ‘open tasks’ which can lead to more interaction while ‘closed tasks’ may have only one acceptable outcome.

In Table 2-1 below, it is evident that the categories are interconnected. For instance, the links in the ‘a’ categories are obvious. When participants are required to hold different portions of the information needed to achieve task goals, in terms of interactant relationship 1a, they meet conditions for interaction requirement 2a as well (Pica et al., 1993: 15). These researchers point out further that there could likely be a variation on the ‘a’ category if goal orientation is convergent and if only one outcome is possible. When one of the members retain all data that is required by others to accomplish the task, then a possible link between goal orientation 3a and outcome option 4a with interactant relationship 1a and interaction requirement 2b could occur.

Table 2-0-1. Task relationships, requirements, goals and outcomes and their impact on opportunities for L2 learners’ comprehension of input, feedback on production and modification of interlanguage (Pica et al., 1993: 14-15)

<i>Task activities and goal</i>	<i>Impact on opportunities for learner</i>		
	<i>Comprehension of input</i>	<i>Feedback on production</i>	<i>Interlanguage modification</i>
<i>A. Interactional activity:</i>			
1. Interactant relationship of request and suppliance activities, based on which interactants hold, request or supply information directed toward task interaction and outcomes:			
a. Each interactant holds a different portion of information and supplies and requests this information as needed to complete the task.	Expected	Expected	Expected
b. One interactant holds all information and supplies it as other(s) request it.	Expected if repeated, with roles reversed		
c. Each interactant has access to information and supplies it of other(s) request it.	Possible	Possible	Possible
2. Interaction requirement for activity of request-suppliance directed toward task outcomes:			
a. Each interactant is required to request and supply information.	Expected	Expected	Expected
b. One interactant is required to request, the other(s) required to supply information.	Expected if repeated, with roles reversed		
c. Each interactant is expected to request and supply information, but not required to do so.	Possible	Possible	Possible

B. <i>Communication goal:</i>			
3. Goal orientation in using information requested and supplied:			
a. Interactants have same or convergent goals.	Expected	Expected	Expected
b. Interactants have related, but divergent goals.	Possible	Possible	Possible
4. Outcome options in attempting to meet goals:			
a. Only one acceptable outcome is possible.	Expected	Expected	Expected
b. More than one outcome is possible	Possible	Possible	Possible

In Table 2-1 above, Pica et al (1993: 19) provide a representation of a communication task typology. The categories have been applied to locate, define and compare five types of tasks as presented in Table 2-2 below. The typology illustrates how the categories of interactant relationship, interactions requirement, goal orientation and outcome option from Table 2-1 can be used to distinguish a variety of task types. These include jigsaw tasks, information gap tasks, problem-solving tasks, decision-making tasks and opinion exchange (Pica et al., 1993: 20). Jigsaw tasks are considered the most effective task type because it involves a two-way flow of information. Jigsaw tasks provide participants the opportunities to work toward comprehension, feedback and interlanguage modification. This task type requires participants to hold, request and supply only part of the total information needed for the completion of the task. Participants engage in a mutual request and suppliance relationship to achieve a single, convergent goal. Hence interaction is required (+ denoting interaction) (Pica et al., 1993: 20- 21).

Concerning information-gap tasks, these refer to tasks when only one participant holds the information to be exchanged. Thus, the interactant relationship is one-way, i.e. sending interactant (X) to the receiving interactant (Y). In order to reach a single, convergent goal of the task, interaction is required (+) but with limited opportunities for comprehension, feedback and interlanguage modifications (Pica et al., 1993: 21). The problem-solving, decision-making and opinion-exchange tasks vary from the two tasks above in that participants may choose to participate in the task or not. Whilst both problem-solving tasks and decision-making tasks require participants to work towards a single outcome, the latter may allow for possible outcomes. The opinion-exchange tasks are considered the least effective task type since it offers the fewest opportunities for comprehension, feedback and interlanguage modification. Although this task type may engage learners in discussion and exchange of ideas, interaction is not required (- denoting no interaction) (Pica et al., 1993: 23).

Table 2-0-2. Communication task types for L2 research and pedagogy analysis based on: Interactant (X/Y) relationships and requirements in communicating information (INF) to achieve tasks goals (Pica et al., 1993: 19)

	INF holder	INF requester	INF supplier	INF requester-supplier relationship	Interaction requirement	Goal orientation	Outcome options
Task Type:							
Jigsaw	X & Y	X & Y	X & Y	2 way (X to Y & Y to X)	+ required	+ convergent	1
Information gap	X or Y	Y or X	X or Y	1 way > 2 way (X to Y/ Y to X)	+ required	+ convergent	1
Problem-solving	X=Y	X=Y	X=Y	2 way > 1 way (X to Y & Y to X)	- required	+ convergent	1
Decision-making	X=Y	X=Y	X=Y	2 way > 1 way (X to Y & Y to X)	- required	+ convergent	1+
Opinion exchange	X=Y	X=Y	X=Y	2 way > 1 way (X to Y & Y to X)	- required	- convergent	1 +/-

Ellis (2003a: 216) points out that the taxonomy proposed by Pica et al. is as good as the theory of language learning on which it is based. The theoretical principle underlying this classification of tasks is that two-way interaction, which entails sufficient negotiation of meaning, generates the conditions required for L2 acquisition. Whilst there is research to support this framework, there are different theoretical underpinnings that highlight other aspects of language use, for instance, learner output. Ellis (2003a: 216) maintains that although psycholinguistic typology of tasks is theoretically sound and are supported by empirical findings, it is essentially used to provide a platform for task selection. Based on claims that there is no accepted single classification of tasks nor any agreement concerning the choice of organizing principle for creating a typology, Ellis (2003a: 216) suggests a general framework for classification of tasks.

2.3.4.5. General framework for task classification

Following from the above discussion on task classification, it is evident that there is no generally accepted typology of tasks. It is due to this reason that Ellis (2003a: 216) proposes a general framework for task classification which are based on 'key dimensions of tasks'. Table 2-3 presents a general task framework, which are based on rhetorical, cognitive and psycholinguistic task typologies outlined above in Sections 2.3.4.2 - 2.3.4.4. Ellis's framework consists of four design features, i.e. input, conditions, processes, and outcomes. Each design feature corresponds to a number of key dimensions according to which tasks can be classified. The detailed classification of tasks is made possible by the

combination of the four design features with the various key dimensions, as illustrated in Table 2-3 (Ellis, 2003a: 217).

Table 2-0-3. A general task framework (Ellis, 2003a: 217)

Design feature	Key dimensions
Input, i.e. the nature of the input provided in the task	1 Medium a pictorial b oral c written 2 Organization a tight structure b loose structure
Conditions, i.e. way in which the information is presented to the learners and the way in which it is to be used	1 Information configuration a split b shared 2 Interactant relationship a one-way b two-way 3 Interaction requirements a required b optional 4 Orientation a convergent b divergent
Processes, i.e. the nature of the cognitive operations and the discourse the task requires	1 Cognitive a exchanging information b exchanging opinions c explaining/reasoning 2 Discourse mode a monologic b dialogic
Outcomes i.e. the nature of the product that results from performing the task	1 Medium a pictorial b oral c written 2 Discourse domain/genre, e.g. description, argument, recipes, political speeches 3 Scope a closed b open

2.3.5 *Grading and sequencing criteria of tasks*

A vital element of task-based teaching and syllabus design is reliable selecting, grading and sequencing of tasks to assist learners to build on prior knowledge. The presentation of graded and sequenced tasks to learners at the appropriate stage of their interlanguage development is another important aspect of TBLT. Despite not having a clear cut set of criteria that can be used to grade and sequence tasks, researchers have proposed several frameworks for the purposes of grading and sequencing of tasks (Baralt et al., 2014a). In terms of Krashen's Input Hypothesis (1982), learners should always be provided with $i + 1$ comprehensible input, i.e. input (i) which is just beyond the learners' current level of interlanguage development. Therefore, the grading and sequencing of content and tasks is essential to provide learners with input just beyond their current level.

Taking into consideration issues regarding task demands and the impact they have on learners' production, language teachers are faced with the difficulty on what to teach and how to order the content they wish to teach. This order of teaching content is referred to as grading. Richards, Platt and Weber (1986: 125), cited in Nunan (2004: 113) describes grading as:

“The arrangement of the content of a language course or textbook so that it is presented in a helpful way. Gradation would affect the order in which words, word meanings, tenses, structures, topics, functions, skills, etc. are presented. Gradation may be based on the complexity of an item, its frequency in written and spoken English, or its importance for the learner”.

From the definition above, Nunan (2004: 113) points out that tasks that are selected for a first lesson are generally easier tasks for beginner learners to learn or perhaps the tasks occur frequently or even the tasks are required for communication in the real working world. Nunan (2004: 114) maintains further that task grading and sequencing is a difficult process because language development is an 'organic' process. In other words, language items are not isolated units taught one at a time but instead are integrated and are taught as a whole. When learning a language, learners are not taught individual aspects of a particular language perfectly. Instead, learners will be taught a number of elements simultaneously, but they will only partially acquire these items.

Willis and Willis (2008: 21) state that a task-based lesson would not entail a single task but a sequence of tasks which are related to each other. They further add that a teacher-led introduction is a task that

is a very valuable task in itself. They claim that it requires learner to process meaningful language thus focussing on meaning. Moreover, it prepares learners for subsequent tasks in that it assists learners to engage their own knowledge on a particular topic and introduces the vocabulary needed to complete the task.

In support of the sequencing of language learning content, Skehan (1996: 51) argues that the sequencing of tasks may alleviate the challenges learners have to cope with regarding form and meaning. He stresses further that tasks are demanding in that learners are compelled to focus their attention to both content and form. As a result, learners' attentional resources may become depleted. Therefore, tasks should be sequenced "on some principled criterion" so that language teachers are aware of the demands tasks place on learners' attentional resources Skehan (1996: 51).

In addition, Robinson (2001a & 2001b & 2005 & 2007 & 2010 & 2011) conducted extensive research to determine the role of task sequencing on learner's production. Robinson's findings suggest that the complexity of tasks has significant effect on language learners' production during tasks. There are several empirical studies showing that accurate task sequence and complexity have significant effects on learners. In a study by Madarsara and Rahimy (2015: 249), they highlighted the effects of task complexity and task types by citing the work done by Rimani Nikou and Skandarsefat (2012). In this study, the effects of written task performance regarding accuracy, complexity, and fluency showed that in decision-making tasks, task complexity did in fact have a considerable effect on accuracy and fluency of learners. However, there was no substantial impact on syntactic complexity. This clearly shows the importance of accurate grading and sequencing.

In this section, a broad discussion relating to the various possibilities for grading and sequencing of tasks (i.e. Skehan, Robinson and Ellis) is provided. Later, in Chapter 4, illustrations by means of the cognitive complexity analysis of real-world target isiZulu tasks for health sciences students and how specifically the SSARC Model proposed by Robinson (2010) can be used to inform decisions regarding grading and sequencing of tasks for the purpose of syllabus design is highlighted.

2.3.5.1 *Skehan's framework for grading and sequencing of tasks*

Skehan proposed a framework for task sequencing, which is a distinction of three factors for the analysis of tasks based on code complexity, cognitive complexity and communicative stress. According to this framework, Skehan (1996) proposed that with task sequencing, the code complexity

(i.e. traditional areas of lexical and syntactic complexity) should be considered together with the content (cognitive complexity) as well as pressure under which learners will be expected to perform tasks (communicative stress). **Code complexity** entails the difficulty and range of linguistic features relating to form such as syntax, morphology and lexis required for task performance. **Cognitive complexity** relates to the difficulty of the content for task completion. Skehan proposes a distinction between two core areas of cognitive complexity, i.e. **cognitive processing and cognitive familiarity**. Whereas cognitive processing relates to the actual processing burden required, performing and completing a task, cognitive familiarity refers to the readily available content knowledge which the learners can depend on.

The next factor in Skehan's framework deals with **communication stress** which relates to a number of items that are not specifically linked to language code or meaning. However, they are essential in order to determine the level of difficulty of a task (Skehan, 1996: 53). With **time pressure**, it refers to the speed of task completion. Considering the time learners may have between receiving the instructions for a task and the actual performance is essential. In addition, whether or not learners are provided a timeline in which to perform the task should also be borne in mind. **Modality** makes distinctions between tasks that require learners to speak or write and listen or read. It is generally assumed that in actual task performance, speaking requires more pressure than writing and listening more stressful than reading. The **scale** of task also impacts on communication stress. It involves several associated features, such as participants involved in a task and the different roles participants will have to cope with in task performance. In addition, the stakes in completing a task is another contributing factor to communication stress. The importance on completing a task and even more so completing the task correctly will produce more stress on the part of the learner. Communication stress is further influenced by whether the stakes are high or low. The level of **control** also influences communication stress. This refers to the extent to which the learners may have control over different aspects on task performance. Drawing on the work of Pica et al. (1993), Skehan states that learners will experience less communication stress should task goals be negotiated or if learners ask for clarity on questions to limit the speed on input they receive, thus giving them much more control over the content. In addition, learners will experience less communication stress if they are allowed to negotiate participant roles for the task.

The model for the sequencing of tasks proposed by Skehan evidently has merit. Skehan points out that the more difficult the tasks, the more it will consume learners' attentional resources, thus resulting in less attention for FonF (Skehan, 1998:97). In other words, sequencing tasks from less cognitively

demanding to more demanding affords opportunities for learners allotted time to attend to language structures. Skehan (1996: 53) further claims that if tasks are well selected in accordance with the framework illustrated above, then they should be able to promote a balance between fluency and accuracy. Skehan argues that proper task sequencing will enable learners to make space for attentional spare capacity, which may eventually lead to new language structures included into actual language production. According to Robinson (2010, 303), Skehan does not consider tasks to be used to convey and practice a linguistic syllabus but rather he argues that tasks should be sequenced from simplex to complex in order to minimize the negative effects that tasks may have on learners. Tasks should therefore, develop accuracy, fluency and complexity of speech in a language (Robinson, 2010: 303). Baralt et al. (2014a) points out further that although Skehan's framework is detailed, placing importance on methodology for successful implementation of task-based instruction, it does not suggest principled measures for task sequencing. Essentially, the purpose of grading tasks according to Skehan's framework is useful as it makes allowance for tasks to be analysed, compared and sequenced in terms of some principled criterion. This framework is quite straightforward and can be easily accessible to language teachers.

2.3.5.2 *Robinson's framework for grading and sequencing of tasks*

Robinson's (2001a: 287) original Triadic Componential Framework is based on cognition hypotheses which contrasts three distinct task dimensions, i.e. between '**task complexity**' (the cognitive demands of tasks) and **task difficulty** (dependant on learner factors such as aptitude, confidence, motivation, etc.) and **task conditions** (the interactive demands of tasks). Robinson proposes that the sequencing process should be based on decisions about increases or decreases in cognitively- defined complexity. In other words, this framework claims that pedagogic tasks should be designed and sequenced on the grounds of increases in their cognitive complexity from simple to more difficult in order to resemble real-life tasks. In addition, the framework was also used for understanding the influences of increasing L2 task complexity on production, comprehension and learning.

Drawing on the works of Prabhu (1987), Long (1985), Skehan (1996), Brindley (1989) and Nunan (1989), Robinson (2001b: 29) points out that the concepts of 'complexity' and 'difficulty' are interchangeable when referred to by other researchers. These researchers argue that the scope of influences on task 'complexity' and 'difficulty' is very broad and includes cognitive, affective, linguistic, interactional and experiential factors amongst others. Robinson (2001b: 29), however, uses the terms 'complexity' and 'difficulty' to describe two contrasting influences on task performance and

proposes that the factors influencing both terms are distinct from the interactive demands of tasks under task conditions.

In his Triadic Framework, Robinson (2001a) describes **task complexity** as comprising of a number of factors which can influence task design. The figure below illustrates Robinson's framework:

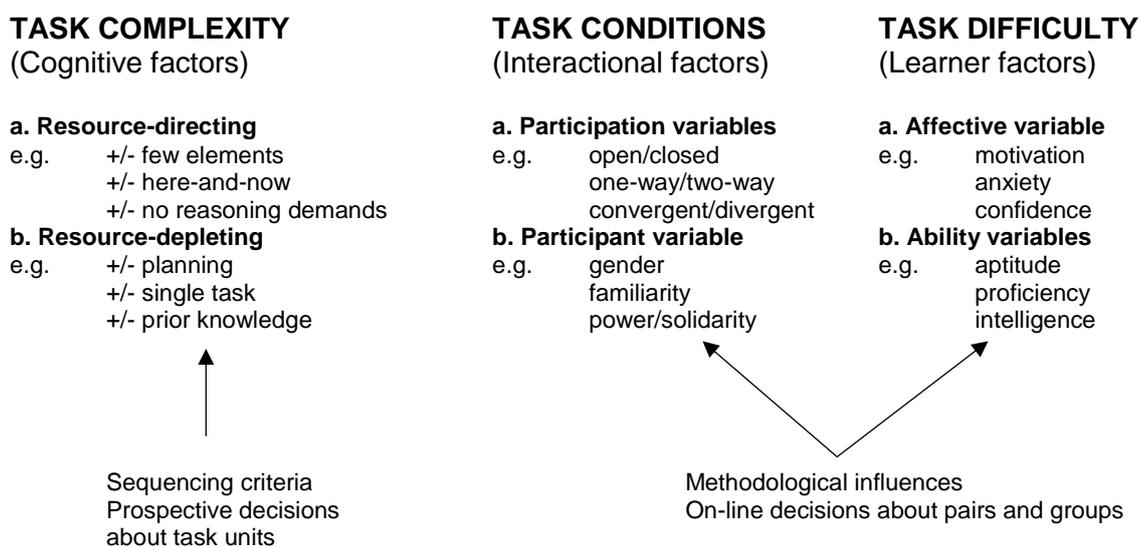


Figure 2-0-1. Framework for grading and sequencing of tasks based on task complexity, condition and difficulty. (Robinson, 2001b: 30)

According to Robinson (2001b: 29) task complexity is viewed as “the result of the attentional, memory, reasoning, and other information processing demands imposed by the structure of the task on the language learner. Robinson makes a contrast between two categories of cognitive features, which may be affected in the process of task design, namely resource-directing and resource-depleting factors. Resources assigned along the **resource-directing dimensions** can influence task complexity. For instance, tasks that require simple description with few/more elements involved in the task input, in a common context (here-and-now) and also where reasoning is required to complete the task consume less attentional, memory and reasoning resources. These factors are considered important because they increase the demands made on learners' cognitive resources. Moreover, they can direct learners' resources to specific aspects of language which can be used in task completion, for instance, the practice of the present and past tense to complete or perform tasks placed in a specific context (Robinson, 2001a: 295). On the other hand, **resource-depleting dimensions** can make additional demands on learners, for instance, the amount of planning time allowed, whether task performance includes one or more tasks and whether prior knowledge of the task content is evident in learners. These tasks are viewed as complex due to the demanding influence these aspects will have on the

cognitive resources of learners. Considering the above aspects, Robinson stresses that it is feasible for syllabus designers to design and practise simpler pedagogic tasks reflecting the real world, which support learners in guiding their attention to focus on the needed aspects of language form during task performance (Robinson, 2001b: 31).

Robinson (2001b: 31) distinguishes the term ‘task complexity’ with learner factors contributing to ‘**task difficulty**’. He refers to ‘task difficulty’ as the resources learners bring to the task. Robinson states that task difficulty relates to learners’ perceptions of the demands on tasks and he distinguishes between both affective variables and ability variables. Affective variables are factors that include motivation, anxiety and confidence to complete a task while ability variables are inherent factors such as learners’ aptitude, proficiency and intelligence (Robinson, 2001a: 295).

Task complexity and task difficulty are unrelated according to Robinson (2001b: 31). Robinson provides two arguments for this case. Firstly, he argues that when two learners are to be compared, one may find the same task more or less difficult to perform than each other due to the ‘inherent ability differentials’, i.e. differences in aptitude and intelligence. Secondly, when two learners are compared, performing the same task and having equivalent intelligence or aptitude, the temporary limiting affective factors such as motivation could result in one learner performing better or worse than the other learner (Robinson, 2001b: 32).

With regard to individual learner factors in L2 pedagogy, Robinson (2002: 14) argues that learners have mixed cognitive abilities. Learners with high cognitive ability may outperform those who have a lower cognitive ability. According to Robinson (2002: 113), pedagogically oriented language aptitude research is mostly based on profiling individual differences in cognitive abilities and matching these profiles to effective instructional options and defined learning conditions. Other important factors that contribute to a better understanding of SLA theory relate to variation in language learning success under specific instructional conditions, differences between implicit, incidental and explicit learning processes and child-adult differences in language-learning abilities. Aptitude, awareness, working memory and age are essential learner variables and an understanding of how and under what conditions individual differences in each impact on learning should be taken into consideration when grading and sequencing of tasks. It is essential to match these learners to instructional conditions, which support their strengths in aptitude complexes, thereby achieving effective classroom exposure and practise for second language learners (Robinson, 2002: 114). In relation to the variability in the rate of learning and the level of achievement in second language learning, Ellis (2005a: 41) emphasises that it is

essential for language teachers to implement an approach to teaching that is adaptable and including a variation of learning activities. The use of easy learner-training material that encourage learners to develop their own approaches can also be considered. Ellis (2005a: 42) stresses that motivating students also impact on the individual differences in learners. In order to ensure a suitable match between learners and instruction, Ellis (2012) suggests changing the learners' belief systems so that they can become more sensitive to a particular kind of instruction. Although modifying learner's belief system may be challenging, learners can be made aware that language learning can take place both incidentally through task-based instruction and intentionally with more traditional forms of instruction (Ellis, 2012: 334). Considering that learners differ according to *inter alia*, age, proficiency level, motivation and working memory, the type of interactional feedback provided will also vary (Nassaji, 2014).

Reverting to the third set of factors in Robinson's framework, **task conditions** do not include task factors or learner factors. Instead, they involve **participation factors** such as flow of information either open or closed and one-way or two-way and **participant factors**. Participant factors refer to learners; gender and their familiarity with other participants, and with the role, they assume for task performance. As is evident in Figure 2-1, the cognitive factors, which determine task complexity, are essential for the sequencing criteria and decisions relating to grading and sequencing of tasks. Factors relating to task conditions and task difficulty does have an influence on syllabus designers' methodological decisions and 'on-line decisions about pairs and groups' as referred to by Robinson (2001b: 32). It may be difficult to foresee the effects of tasks on such factors because of their temporal nature and wide range of influences (Robinson, 2001b).

Robinson (2001b: 33) states that interaction between the three factors on task performance and learning based on his framework are expected. Task complexity, based on resource-directed factors for instance, may affect task difficulty i.e. the affective factors. Robinson points out that the differences in task complexity are the basis for future decision making on task-based syllabus design and the sequencing of task. A greater cognitive demand on tasks for example several elements involved in a task, together with increased levels of reasoning required, will cause learners to identify a task as more difficult as a result of the possibility of greater levels of anxiety and reduced levels of confidence. Robinson emphasises the need for further research into the exact nature of interactions between the three varying sets of factors.

From the above discussions relating to the frameworks proposed by Skehan and Robinson, it is evident that Robinson provides a more comprehensive outline since it leads to greater accuracy in the grading and sequencing of tasks. Although existing research makes it impossible to specify the interaction that could be evident between the three sets of factors, Robinson's motivation on the importance of determining the cognitive factors involved in tasks for the purposes of grading and sequencing makes his framework a feasible option. In Chapter 4 of this study, the most recent version of Robinson's Cognition Hypothesis framework for the purposes of grading and sequencing of tasks is presented and adopted for use within this study. Subsequently, a discussion of the SSARC (simplify-stabilize-automatize-restructure-complexify) (Robinson, 2010) model for task sequencing is provided.

2.3.5.3 *Ellis's framework for grading and sequencing of tasks*

Thus far, the preceding sections have described two different synopses (i.e. proposal from Skehan and Robinson) of the different ways in which task sequencing have been conceptualised. Ellis too proposes four criteria to be considered when grading tasks in his framework. Ellis (2003a: 220) highlights that although syllabus designers may be provided with a basis for identifying which tasks to incorporate in a syllabus, what is also required is the grading and sequencing of linguistic content to enable optimal learning. He further points out that it is essential for sequencing tasks so that they match to learners' developmental levels and consequently allow learners to select both linguistic and non-linguistic resources that will be required for task completion and to reach at a task outcome (Ellis, 2003a: 220). By synthesizing previous proposals of Brindley (1989), Candlin (1987), Nunan (2004), Skehan (1998) and Robinson (2001a), Ellis (2003a: 220) proposes four criteria that aim to account for task complexity, i.e. 'the ease with which learners are able to perform different tasks'. These criteria include task input, task conditions, learning processes and outcomes, all of which are discussed further in this section. Ellis (2003a: 221) states that his framework presents these various factors taxonomically because current research provides insufficient data about how these factors interrelate to determine complexity of tasks. The following table illustrates Ellis's criteria framework for grading tasks.

Table 2-0-4. Framework for the grading of tasks. (Ellis, 2003a: 228)

Criterion	Easy	Difficult
A Input 1 Medium 2 Code complexity 3 Cognitive complexity a information type b amount of information c degree of structure d context dependency	pictorial → written high frequency vocabulary; short and simple sentences static → dynamic few elements/relationships well-defined structure familiar	→ oral low frequency vocabulary; complex sentence structure → abstract many elements/relationships little structure unfamiliar
B Conditions 1 Interactant relationship (negotiation of meaning) 2 Task demands 3 Discourse mode required to perform task	two-way single task dialogic	one-way dual task monologic
C Processes 1 Cognitive operations: a type b reasoning need	exchanging information → reasoning few steps involved	→ exchanging opinions many steps involved
D Outcomes 1 Medium 2 Scope 3 Discourse mode of task outcome	pictorial closed? lists, descriptions narratives, classification	→ written → oral open? → Instructions, arguments

2.3.5.3.1 Input factors

The first group of criteria in Ellis's framework for grading and sequencing tasks involve factors relating to **input**. The input provided to learners in a task can influence its complexity in different ways. The **medium** used to transfer the input can take several forms, which also can influence the complexity of the task. It is believed that when information is presented in a written or pictorial form, learners find it easier to process because they can decode it in their own time. On the other hand, input provided orally is viewed as more challenging because processing requires online decoding. Ellis (2003a: 222) infers that picture-based input is easier to process because it does not place any strains on the learners' linguistic processing. It is for this reason that pictorials and other visual aids are recommended for beginner syllabi.

The next factor of **code complexity** of the input also has an influence on the learners' ability to comprehend. Code complexity refers to the lexical and syntactical complexity of the input. Input comprising of vocabulary that learners are accustomed to and syntax containing sentence structures that learners have previously seen or which are on a level available to learners, are more manageable for them to understand than input containing unaccustomed vocabulary and complex sentence structures. The code feature, which relates to the amount of subordination in the syntax, should be taken into consideration when determining the code complexity of input. While referring to the work by Oh (2001), Ellis (2003a: 222) notes that there is evidence that support "elaborative input i.e. input that employs devices such as paraphrases and glosses rather than simplification, is more comprehensible than simplified input". This comment also correlates with Long (2015) stating that elaborated input and not simplified input should be encouraged. Incidentally, elaborated input features as one of the methodological principles proposed by Long (2015).

Another very important factor to be considered in grading and sequencing tasks is the **cognitive complexity** of input. This relates to the cognitive demands that learners must deal with when processing the information content of the task input. Ellis (2003a: 222-223) cites Brown et al (1984) by stating that there are two dimensions to be considered when grading and sequencing tasks. The first dimension refers to the nature of the information type and the second one involves the amount of information to be processed. Task input can either contain 'static' information, i.e. information that remains the same during task performance or it can contain 'dynamic' information which is information that changes as the task develops such as events and activities during a video presentation or it can also be 'abstract'. With this third information type, information is used in opinion exchange and decision-making task types. Referring to the claims made by Brown et al, Ellis states that static information is seen as easiest to process, followed by dynamic information, placing abstract information as the most difficult end of the scale. Ellis (2003a: 223) also cites Prabhu (1987) who notes that task input that requires "learners to work with 'concepts' proved more difficult than tasks involving the names of objects and actions". The amount of information provided can also affect the cognitive complexity of the input. The number of different elements supplied in the input, the more difficult the task will be to perform. Ellis (2003a: 223) notes that tasks with clearly defined structures in a readily accessible macrostructure may be easier to perform than loosely structured information.

Context dependency of input can also have an effect on task complexity. It is assumed that textual input supported by visual resources such as pictures, diagrams and graphs are considered much easier to process task complexity. **Familiarity of information** is the last factor related to input which could

have an effect on the grading and sequencing of tasks (Ellis, 2003a). According to Ellis (2003a: 223), a task will be considered easier for learners if there is link between the theme of the task and the learners' world knowledge. Ellis (2003a) points out that this factor is best viewed as a task factor as it relates to choosing thematic content.

2.3.5.3.2 Task condition factors

In the second group of criteria, Ellis proposes three factors that relate to **task conditions**. These include conditions that influence **negotiation of meaning, tasks demands, and the discourse mode** needed by the tasks. Ellis (2003a: 224) states that it is essential that **conditions influencing negotiation of meaning** be taken into consideration when determining task difficulty. Negotiation of meaning is believed to be less difficult where task conditions are favourable as compared to tasks with fewer opportunities. For instance, one-way tasks could promote less negotiation of meaning than two-way tasks. As described in the General Task Framework by Ellis (see Table 2-3), the design features of information configuration, the interactant relationship, interaction requirement and the task orientation should be considered in the process of grading and sequencing tasks.

Task demands also influence task conditions. Tasks may impose a single or a dual demand. With multiple demands on tasks, it will certainly be more demanding, and grading and sequencing should be processed accordingly. For instance, a task that consists more than a single demand could require participants to identify a patient's condition and communicate their history taking.

Discourse mode is the last factor under this criteria relating to task conditions. Ellis (2003a: 225) points out that intuitively, dialogic tasks are relatively easier as learners have the opportunity to support each other during task performance. Citing the framework proposed by Skehan (1996), Ellis (2003a: 225) mentions that the control participants may have over tasks performance is a key element in communicative stress. Learners in a dialogic task have the opportunity to negotiate meaning through asking for clarification and provides them control over the way the task is performed, thus resulting in a reduction in communication stress.

2.3.5.3.3 The process of performing a task

The third group of criteria influencing task complexity according to Ellis's framework concerns the cognitive procedures required for performance and completion of a task. Ellis (2003a) makes a distinction between the type of cognition process involved and the amount of reasoning needed to

complete the task. The cognitive process could vary from simple procedures such as exchanging information to more complex ones such as exchanging opinions, thus implying that information-gap tasks will prove to be easier and opinion-gap tasks to be the most difficult. With reasoning-gap tasks, the reasoning required to perform, and complete tasks successfully should be taken into consideration when grading and sequencing tasks. Ellis (2003a: 225) refers to the work by Prabhu (1987) to describe that task difficulty is greater as the amount of reasoning steps increases. Consider the following task based on patients' history taking – a task that requires learners to use information given to determine the presenting complaint of the patient will require less reasoning as opposed to a task that would also require learners to make a diagnosis of the patient's condition.

2.3.5.3.4 Task outcomes factors

The fourth group of criteria that influences task complexity in the framework proposed by Ellis (2003a) involves task outcomes. Factors relating to task outcomes include medium, scope, discourse domain and complexity of the outcome. As with the input factors, the **medium of outcome** can also influence task complexity. Ellis (2003a: 226) states that the easiest complex outcome for most learners would be requesting them to produce a drawing or a map or to perform a simple action that do not require the use of language for the outcome. Oral and written tasks, on the other hand, do require the use of linguistic input, thus making these more complex. Oral tasks that involve presentations or role plays in front of a group or a class would inevitably prove to be more difficult, placing more stress on the learners (Ellis, 2003a: 226).

According to Ellis (2003a: 226), there is no existing research concerning the **scope of the task outcome** that supports the relative complexity of tasks between open and closed output. However, Ellis points out that it is possible to naturally assume that tasks with closed outcomes will be easier on learners as they would know what outcome to work towards, especially if a single outcome is needed. It would be more difficult with open outcomes as several options may be available. As with the above factor, the discourse domain of the outcome provides no literature, which may be helpful to syllabus designers and language teachers to determine the cognitive demands of the different discourse domains. Ellis (2003a: 226) suggests that intuition can be used as the basis for accepting that lists and descriptions are considered to be less difficult than instructions and arguments. The degree of complexity can also be determined by the level of detail needed in the outcome for these discourse domains. The last factor of the **complexity of the outcome** is also considered when grading and sequencing of task. Ellis (2003a: 227) discusses this factor by stating that outcomes that require few

details from learners will result in simpler tasks. Outcomes involving high levels of detail will also require large lexical and more syntactical correctness.

In summary, the framework proposed by Ellis (2003a) can be used to inform language teachers and syllabus designers how tasks are sequenced into a lesson and a syllabus. Ellis emphasises that although there is not much literature on how to best sequence tasks, he does highlight that sequencing tasks to match learner's developmental levels and allowing them to select their resources to achieve task outcome is fundamental for the design of a syllabus (Baralt et al., 2014b). Ellis, along with Skehan (1998) and Robinson (2001a & 2001b), suggests proposals for task complexity and maintains that task complexity can be modified by the methodological techniques that language teachers can utilize to teach a task. According to Ellis (2003), task complexity is the extent to which a particular task is essentially easy or difficult. Perhaps one of the shortcomings of Ellis's framework is that he does not provide a guide for how to sequence tasks but instead tries to endorse cognitive complexity increases in individual tasks via his grading concept (Baralt et al., 2014b: 12).

2.4 Focus on form (FonF) in a task-based syllabus

Research in the field of second language learning and teaching has shown that the teaching of grammar has been a contentious issue for decades. In earlier traditional approaches such as the Grammar Translation Method and the PPP approach, focus was on structural features of the language rather than on meaning carried by the language via communication (Ellis, 2014). Much emphasis was placed on the analysis of the language forms and at the expense of real communication (Nassaji & Fotos, 2011: 3). Because of these earlier approaches, many African languages including isiZulu began being taught as L2 where focus was on grammatical form and function instead of communicative meaning.

Following from the above discussion on the principles of TBLT and the way in which tasks are sequenced in a task-based language teaching approach, this section examines the benefits for the inclusion of focus on linguistic form and where FonF should be used in a task sequence. An investigation into issues related to attention to linguistic form in L2 acquisition is considered. Research suggests that learners acquiring a L2 are more successful and perform better in the target language if they are guided to focus their attention to linguistic form (Ellis, 2001 & 2002a & 2014; Ellis et al., 2002; Housen & Kuiken, 2009; Long & Robinson, 1998; Skehan et al., 2012). This attention to linguistic form within a wider communicative spectrum is known as FonF and several studies illustrate how to incorporate FonF in instructed L2 learning (Doughty, 2001; Doughty & Williams, 1998; Erlam

& Pimentel-Hellier, 2017; Fotos, 1993; Garcia Mayo, 2014; Keck & Kim, 2014; Klapper & Rees, 2003; Nassaji, 2014; Nassaji & Fotos, 2011). Further discussions on FonF have been included in subsequent sections. The benefits of incorporating FonF is also evident in more recent approaches such as TBLT and CALL (Basturkmen et al., 2002; Collentine & Collentine, 2015; DeKeyser, 1998), which is further investigated in Chapter three.

2.4.1 A definition of Focus on form

A review of literature on FonF provides several definitions. Doughty (2001: 210-211) offers four different definitions. Firstly, a theoretical definition of FonF by citing the works of Long (1991), she states that FonF explicitly draws students' attention to linguistic features as they do surface incidentally in lessons where the prime focus is on meaning or some kind of communication. Referring to the second operational definition by Long & Robinson (1998), Doughty states FonF concerns an intermittent shift in attention to linguistic code features either by the teacher or by students that is activated by perceived problems with comprehension or production. The third and fourth definitions, Doughty makes comparisons between focus on forms concerning explicit learning and focus on meaning relating to experiential learning. Doughty (2001: 211) further points out that focus on forms and focus on form are "not polar opposites...." She emphasises that "focus on form entails a focus on formal elements of language, whereas focus on forms is limited to such a focus (Doughty, 2001: 211)." Similarly, Benati, Laval & Arche (2014: 4) refers to two types of grammar instruction options when referring to the works of Long (1981) and Long and Robinson (1999), i.e. focus on forms and focus on form. The former, focus of forms, is a type of instruction that separates specific language forms and is taught one at a time as in the traditional method of teaching. FonF is characterised by grammar instruction approaches, providing learners an opportunity to focus on meaning as well as linguistic form of the target language as in a communicative task (Benati et al., 2013: 4). According to Long (2015: 317), FonF constitutes one of the methodological principles of TBLT.

Nassaji and Fotos (2011: 1), refer to FonF as an instructional option that combines grammar and communication in L2 acquisition. Their conception of FonF is viewed as a series of methodological options, grounded by communicative language teaching principles; they attempt to maintain a focus on language forms in various ways. Nassaji and Fotos (2011: 13) point out that focus can be attained explicitly and implicitly as well as deductively or inductively. Focus can also be achieved through integration or sequenced options, with or without planning. They further point out that in order to achieve communicative competence and to encourage learners to use language accurately and fluently

for real communicative purposes, it is necessary for focus on grammar to be included into L2 communicative instruction (Nassaji & Fotos, 2011: 14).

2.4.2 Theoretical issues relating to focus on form

According to Nunan (2004: 93) the inclusion of FonF in task-based teaching has been controversial. Nunan (2004: 93) states that some proponents argue that communicative interaction is essential in language teaching as well as sufficient for the acquisition of a language. Therefore, FonF is not a necessity. Krashen (1981 & 1982) as referred to by Nunan (2004), claims that there are two processes involved in the development of language, i.e. subconscious acquisition and conscious learning. Nassaji and Fotos (2011: 7) argues that learners acquire language unconsciously and implicitly through the exposure of comprehensible input instead of learning it consciously via explicit teaching of grammatical rules. The implication of this view places strong emphasis on communication and negotiating of meaning, learners' attention is placed on the content and on performance of task and reaching task outcomes. As a result, learners may have very limited processing capacity to focus on language and form. Having to address this imbalance, some form of attention to grammatical form was required to enable interlanguage development.

Lantolf (2000) cited by Nunan (2004), proposes a 'sociocultural theory' which is based on the psychological theories of Vygotsky. Nunan (2004: 94) points out that Vygotsky has seen language as both a social and cognitive tool through which learners are able to use these tools in order to make a change their world. Researchers who generally use this theory study the interaction that seems to exist between multiple learners when required for task completion. This is carried out to see how these interactions can provide opportunities for L2 learning. It typically occurs when a task is performed where only one of the participants has certain linguistic knowledge, which the other participant does not have but is required for task completion. Erlam and Pimentel-Hellier (2017: 60) examined the occurrences of incidental FonF in an adolescent near-beginner foreign language classroom. The study indicated that this type of attention to form is feasible in classrooms with low proficiency learners where interaction occurs in groups or pairs.

Other issues relating to the use of FonF, is the relationship that exists between the task that has to be performed and the language that will support in the performance of this task. There is much ambiguity in this regard, as to whether a particular grammatical form is needed to successfully complete a task. There is also the uncertainty as to whether or not to use limited linguistic tasks that are at one's disposal

in order to complete a task successfully. According to Loschky and Bley-Vroman (1993: 132), tasks may be constructed in such a way that they contain grammar knowledge in different ways. Communicative tasks may not always be required to use a specific form for successful task completion. It could happen that certain forms appear naturally during the completion of a task. This is referred to task-naturalness. The other two types of involvement of a grammatical structure in a task include task-utility and task-essentialness (Loschky & Bley-Vroman, 1993). With task utility, a task can be completed without a grammatical construction; however, a task can be made easier with the use of such a structure. Concerning task-essentialness, it may happen that some tasks cannot be performed without the use of some relevant or essential grammatical structure. The grammatical structure in such a case is the real ‘essence’ of task-essentialness (Loschky & Bley-Vroman, 1993: 139). For instance, it is unlikely to complete a task if the relevant vocabulary has not been mastered. Loschky and Bley-Vroman (1993) point out that whereas production tasks are restricted to task-utility and task-naturalness, task-essentialness is likely to occur in comprehension tasks. The use of how task-essentialness can be used within communication tasks are further explored in Chapter 5 of this study.

Further considerations relating to FonF include the viewpoints put forward by Ellis. Ellis (2005b: 9) states that FonF has been used in three related but distinct ways. He mentions that these ways are dependent on whether the perspective is either a pedagogic one, a discursal one or a psycholinguistic one. From a pedagogical perspective, FonF involves the attempts from the teacher to intervene in the acquisition process by encouraging learners to pay attention to language form and structure while they are primarily concerned with decoding or encoding message content (Ellis, 2005b: 9). These efforts can be either planned, for instance when a specific language form is selected for attention, or it can be incidental such as when specific forms are attended to as the need arises. In the context of a discursal perspective, Ellis (2005b: 9) points out that FonF concerns the pre-emptive and reactive devices that interlocutors use to pay attention to form while learners are engaged in performing some work that gives priority to message conveyance. He refers to these devices as consisting of ‘queries’ relating to linguistic structure or different types of implicit and explicit corrective feedback, for example, reformulations of learners’ incorrect utterances, i.e. recasts. Finally, from a psycholinguistic perspective, FonF involves the mental processes that occur when selective attention is given to linguistic form during an attempt to communicate. The term ‘noticing’ is used as an overarching expression to refer to these processes.

According to Ellis (2003a: 319) tasks are viewed to be the “the ideal tool for achieving a focus on form”. Amongst the different options at our disposal for the inclusion of linguistic form into task-based

approach to language teaching, Ellis (2003a) suggests the use of focused tasks and unfocused tasks in task-based methodology. He also proposes two approaches to including FonF into a task-based syllabus, i.e. integrated approach where both a code-based module and the traditional PPP structural syllabus could be used. This is clearly indicative of an eclectic approach to FonF promoted by Nassaji and Fotos (2011).

Ellis distinguishes between ‘focused tasks’ and ‘unfocused tasks’. The former referred to as ‘an activity that has all the qualities of a task but has been designed to induce learners incidental attention to some specific linguistic form when processing either input or output’ (Ellis, 2003a: 342). With the latter, ‘unfocused task’, learners may choose from a range of forms with primary attention to communication and negotiation of meaning. In focused tasks, learners are not informed of the specific linguistic feature of the tasks but rather the tasks are designed to draw on the use of defined linguistic focus concurrently with an emphasis on communication and meaning. Ellis (2003a: 141) points out that there should be no misunderstanding between focused tasks and situational grammar exercises. Regarding situational grammar exercises, these are designed to provide contextualised practice of a specific linguistic feature. In other words, learners are told what the linguistic feature is and are therefore intentionally made to draw attention towards the feature and attempt to attend to it when performing a task. With focused tasks, on the other hand, learners are not informed of the particular linguistic feature and thus attend to the task as if it is an unfocused task. The explicit FonF will be barely noticeable however; it will be incidental when performing the task. Ellis (2003a) states that both focused tasks and situational grammar exercises can be similar when designing such tasks but the distinction lies in how they are implemented. The use of focused tasks has been debatable. While Ellis (2017) believes that focused tasks have both a place in language programmes and in research designed to inform pedagogy, Long and Skehan view focused tasks in TBLT as serving no purpose. According to Ellis (2017: 510-511), Long’s view is based on the premise that tasks are drawn out from target tasks and hence making no space for designing tasks that attend to specific language structures. Skehan views tasks as a way to make sure that there is balanced development with complexity, accuracy and fluency. To understand the benefits of focused tasks in task-based methodology, it is essential to take into consideration the psycholinguistic rationale underlying such tasks. Ellis (2003a: 144) examines two types of cognitive theories of learning for focused communicative tasks, i.e. skill-building and automatization and implicit learning theories.

Regarding skill-building theories, it is unanimous amongst language researchers that effective communicative language use requires rapid online processing. This process requires learners to be able

to understand what is being said, process the input and communicate an appropriate response in the shortest possible time. In order to attain this, learners need to develop automatic processes or procedural knowledge. Ellis (2003a) refers to McLaughlin and Heredia (1996:214) who state that automatic processing concerns a trigger action of nodes in memory every time the appropriate inputs are present. These researchers further state that this action can be viewed as a learned response that has been built up through consistent mapping of the same pattern over many trials. Ellis (2003a: 144-145) notes two theories regarding the development of skill-automatization. The first claim is that automatic processing differs from controlled processing which requires attentional control for the activation of nodes. Controlled processing occurs at a slower rate, activating one process at a time whereas automatic processes are easy and rapid. The second theory claim refers to the concept of skill development, which concerns the process of exhibiting declarative knowledge. With declarative knowledge, this would imply that learners should be provided with factual or explicit knowledge about the language, especially the linguistic structure of the target language. This knowledge can be processed using general problem-solving procedures. Ellis (2003a: 145) advances further that when learners are able to use a specific feature correctly and without having to think about it, their explicit or declarative knowledge will become fully automatized and change to procedural knowledge.

The discussion above illustrates clearly the benefits of focused tasks in providing communicative practice to learners. In terms of the skill-building theories, a skill will eventually become automatized and proceduralized if learners are exposed to sufficient opportunities for practice of the language. Ellis (2003a: 145) refers to Johnson (1996) who proposes that the focused tasks instruction should provide hints to learners to gear them in developing declarative knowledge that can be proceduralized. Thus, this implies that explicit knowledge will transform into implicit knowledge over time through communicative practice.

Implicit learning is the second type of cognitive theory of learning that Ellis proposes as support for the implementation of focused task. Ellis (2003a: 148) refers to the definition of implicit learning by citing N. Ellis (1994) as “implicit learning is acquisition of knowledge about the underlying structure of a complex stimulus environment by a process which takes place naturally, simply and without conscious operations.” Ellis (2003a) notes that in terms of this theory, learning takes place unconsciously and automatic. There seems to be a consensus amongst advocates of this theory who claim that first language is acquired mainly by implicit learning. However, some linguists such as Krashen contend that a L2 is acquired in the same manner as first language acquisition. In other words, a L2 is also acquired through implicit learning. According to Ellis (2003a: 151), although this theory

evidently supports the use of unfocused tasks, focused tasks are also justified in that they offer learners opportunities to communicate in a manner that makes implicit learning of specific linguistic forms possible.

Additional motivation for the use of FonF in task-based methodology can be accommodated through consciousness-raising tasks. FonF is seen in a manner in which learners' consciousness are heightened when they are guided to notice important forms in input (Klapper & Rees, 2003: 306). Whilst Nunan (2004: 98) elaborates that it is essential to focus on a specific feature for attention when consciousness-raising (CR) tasks are designed for learners to perform, Ellis (2005b: 9) argues that, especially with adult learners, FonF should be explicit during the timeframe of their language learning process. Ellis (2001: 162-163) points out that conscious-raising tasks are different from many other focused tasks. It differs in two ways:

“First, whereas structure-based production tasks, enriched input tasks and interpretation tasks are intended to cater primarily to implicit learning, CR-tasks are designed to cater primarily to explicit learning – that is, they are intended to develop awareness at the level of “understanding” rather than awareness at the level of “noticing”. Thus, the desired outcome of a conscious-raising task is awareness of how some linguistic features work. Second, whereas the previous types of tasks were built around content of a general nature (e.g. stories, pictures of objects, opinions about the kind of person you like), CR-tasks make language itself the content. In this respect, it can be asked whether CR-tasks are indeed tasks. They are in the sense that learners are required to talk meaningfully about a language point using their own linguistic resources. That is, although there is some linguistic feature that is the focus of the task learners are not required to use this feature, only think about it and discuss it. The “taskness” of a CR-task lies not in the linguistic point that is the focus of the task but rather in the talk learners must engage in, in order to achieve an outcome to the task.”

Nunan (2004: 99) maintains that in designing CR tasks, it is necessary to first isolate the specific feature for attention. It is useful to provide the learners with input data that illustrates the given feature together with the rule that explains this feature. Thereafter, learners are required to understand the specific feature and they should be able to describe the linguistic structure.

Several recent empirical studies have argued that explicit attention to form was useful for language learning (Garcia Mayo, 2014). According to Garcia Mayo (2014), there seems to be four ways in which

tasks can be manipulated in lessons so that learners' attention can be drawn to issues or instead of being unnoticed. These include manipulating tasks components, referring to the work of Pica et al. (1993), manipulating task planning as suggested by Ellis (2005b), providing corrective feedback as in the study by Nassaji and Simard (2010) and interacting in collaborative tasks. Other scholars like Fotos (2002) claim that planned, explicit grammar lessons do indeed have a place in the L2 classroom. As cited in Keck and Kim (2014), Fotos (2002) also recommended a three-stage approach to L2 grammatical instruction, which includes, an explicit grammar lesson, a communication task and a follow-up discussion of students' use of grammar during the task.

In a study by Nassaji and Fotos (2011: 135), they proposed the use of six theoretically and empirically motivated instructional options to incorporate grammar instruction and meaningful communication. These options include processing instructions, textual enhancement, discourse-based grammar teaching, interactional feedback, grammar-focused tasks and collaborative output tasks. Their advice to language teachers is to be "eclectic and select from a repertoire of instructional strategies to address the unique needs and goals of their learners and contexts" (Nassaji & Fotos, 2011: 140). In other words, language teachers should be able to choose, select, and combine the best features, principles and activities of various approaches to grammar teaching to achieve success.

Benati et al (2013: 9) share some overall principles that language teachers should take into consideration when developing grammar tasks and providing effective grammar instruction in the language classroom. These include:

- Grammar tasks should be developed to ensure that learners process the input correctly and efficiently;
- Grammar tasks should be designed for learners to notice and process the forms in the input and eventually make correct form-mapping connections;
- Language teaching should include a variety of grammar tasks (input, output and interactional options) that invite both focus on form and focus on meaning.

In the following two pedagogical development studies, the integration of FonF has been highlighted. Garcia Mayo (2014) illustrates how collaborative tasks can be used to make students pay attention to formal aspects of the language. According to Garcia Mayo (2014: 96), collaborative tasks activate devices to assist the language learning process as learners are given the chance to air their views about particular features of the task they are completing. This process therefore allows learners to focus their

attention on formal aspects of the language within a communicative aspect. She points out further that collaborative tasks can also measure the impact of collaboration on learning through pre- and post-activities. Thus, gauging whether the impact is lasting and has made a difference in restructuring the learners' interlanguage system. Another important aspect that needs to be considered concerning collaborative tasks, is about individual and social factors when referring to learners' interaction (Garcia Mayo, 2014: 97).

In a study by Nassaji (2014: 117) factors influencing interactional feedback and its effectiveness as well as drawing on learners' attention to form in the context of communication was examined. The study also described that noticing is an essential requirement for language learning and the degree of effectiveness of feedback is dependent on the extent to which learners can notice the feedback as correction. In other words, language teachers should ensure that feedback is salient or explicit enough during feedback sessions for learners to make sense on the correct forms. As a result, recasts can be increased in several ways. Nassaji (2014: 117) points out that encouraging learners to self-correct themselves instead of providing the correct form by the language teacher is beneficial. This is important as it allows for a discovery-based approach to error correction and can be considered as not just a motivating factor but is also useful for learners to infer and test their hypothesis about the language they are learning. However, this self-repair process, Nassaji argues, can only happen when learners already have declarative knowledge of the target form. If this is not the case, Nassaji advises that extra clues should be provided to learners to discover the language form they may need. Nassaji (2014:118) found that in providing feedback, there should be a match between learners' developmental readiness and the feedback itself. Nassaji (2014:118) also emphasises that choosing the appropriate type of feedback is essential. There are several variables that should be taken into consideration for example, the nature of the error targeted, the context in which the feedback is provided and other various individual differences such as age, language proficiency, attitude and motivation. The various factors influencing learners' individual differences were discussed earlier in this chapter.

2.4.3. *Focus on form in an instructional sequence*

The ongoing question often raised is *where* language teachers should fit such a focus in the language learning process. Nunan (2004: 101) claims that FonF should be used at some point in the instructional sequence. In earlier versions of task-based language teaching, FonF was introduced first, at a "pre-communicative stage" of a lesson. The intention was to provide a basis for communicative work at

some later stage. He comments further that learners cannot be expected to first use the language before it has been taught to them explicitly (Nunan, 2004: 101).

Nunan (2004: 34-35) introduces six steps to the developing units of work as illustrated below. These six steps include:

- schema building,
- controlled practice,
- authentic listening practice,
- focus on linguistic elements,
- provide freer practice and
- introduction of the pedagogical task

According to Nunan (2004), he asserts that from the six steps, FonF should be taught in step four. Nunan (2004: 101) highlights that by placing FonF in step four, learners have the opportunity to hear, see and even have the chance to use the language in the prior steps. Learners also have the chance to then see and hear how first language speakers as well as competent L2 speakers use the language communicatively. It is hoped then that learners will be able to form a link between the grammatical forms, as well as the communicative functions thereof.

2.5 The role of the teacher in TBLT

TBLT has been recognised as a learner-centred approach to L2 pedagogy, which highlights the role of learners as typically the predominant feature in TBLT literature. Meagre attention has been given to the role of the teacher in TBLT research as opposed to traditional teacher-dominated approaches (Van den Branden, 2016). On the contrary, however, the role of the teacher in task-based instruction have been recognised as a demanding one. Long (2016) points out that it is essential that the teacher exhibit great expertise in TBLT as it is more communicative than in other syllabuses such as PPP. Teachers are required to be quick thinkers when unexpected errors by learners are triggered, especially when providing corrective feedback and dealing with focus on form issues. This process seems difficult as opposed to working through monotonous drills and exercises one at a time (Long, 2016: 25). Moreover, if technology-mediated TBLT is incorporated, then the role of the teacher requires knowledge and skills that accompany the software or technological tool.

While TBLT does encourage independent learning, Van den Branden (2016: 166) states that the learning of complex skills such as the developing communicative competence in a L2 does require the aid of another person. Although this assistance may come from other classmates, Van den Branden (2016) points out that a more competent and skilful language learning partner is required, who can assist learners overcome, *inter alia*, learning difficulties, error correction and building on new understanding. Clearly, a teacher in L2 classrooms can only be the most competent person for this role. Drawing on the various functions language teachers are meant to accomplish in the role of the teacher in TBLT, Van den Branden (2016) provides three different perspectives. These include the teacher as mediator of the learners' language learning development, the teacher as a change agent and the role of the teacher as researcher and active agent. In the capacity of mediator, the teacher can make decisions relating to the promotion of students' language learning when engaged with task-based activities. Van den Branden (2016: 167) notes that actions and decisions can be taken by teachers during the implementation of task-based methodology, i.e. the three-stages of pre-task, during-the-task and post-task stages. A discussion on the three-stage methodology follows this section. In respect of decisions on content and lesson activities taken by teachers in task-based methodology, Long (2015) strongly asserts that teachers should be guided by the L2 needs analysis conducted with their learners.

The next role of the teacher as a change agent concerns the teacher as a main figure for the operation of the task-based approach. The teacher is viewed as an innovator of L2 education. However, not all teachers embrace TBLT wholly. Not all countries or official government bodies have implemented TBLT into their educational systems. Although there have been concerns noted regarding the implementation of TBLT in mainstream educational systems, a small selection of teachers practising TBLT successfully have been documented (Adendorff, 2014; East, 2014; Edwards & Willis, 2005; Steenkamp & Visser, 2011; Van den Branden, 2016).

The last role of the teacher relates to the teacher as researcher and a dynamic contributor to the progress and further enhancements of TBLT as a researched instruction (Van den Branden, 2016: 175). With this role, teachers are encouraged to conduct action research or participatory research, where information relating to their students' language patterns or behaviours can be obtained, analysed and shared with TBLT community or other researchers in the field. Thus, the role of the teacher is crucial in the success of future TBLT endeavours.

2.6 The implementation of task-based methodology

In this section of the chapter, a framework for the implementation of a task-based methodology into a L2 classroom is described. Also included in the investigation, are possibilities for the inclusion of FonF. It is essential to take into consideration how tasks are actually implemented after they have been graded and sequenced. The key principles in ensuring accurate grading and sequencing have been discussed earlier in Section 2.3.5.

Skehan (1996) proposes a three-stage methodology consisting of pre-task activities, the actual task or during task activities and post-task activities for the implementation of TBLT. With pre-task activities, Skehan (1996: 53-55) specifies two goals, the first of which aims to draw learners' attention to the language that is required for task performance. This can be achieved by restructuring the target language through implicit and explicit attention. Consciousness-raising would be a usual technique that can be used during pre-task phase to assist interlanguage development during the performance of a task. The second goal relating to pre-task activities is to assist learners with reducing the cognitive load of the task. This can be done by planning various activities that will ease learners' processing capabilities when actually performing the task and will free up learners' attention on the task content in order to produce accurate and fluent language.

The next part of Skehan's methodological stages of task implementation is during the task stage. According to Skehan (1996: 55), the main variable during this stage is the choice of tasks itself. He stresses that tasks should not be too difficult for learners and if they are then their mental processing capacity will be used for task content, thus having limited processing for attention to language production that may reduce the pedagogic value of a task-based methodology. Skehan's framework on grading and sequencing of tasks, as discussed earlier in Section 2.3.5.1 should be considered when task implementation decisions on task choice need to be made. He emphasises that time pressure, language modalities, the scale of the task, the stakes involved within a task and the level of control learners may have over the different aspects of the task should be considered largely for task grading and sequencing.

Finally, with post-task activities, Skehan (1996: 55-56) points out these activities may alter the manner in which learners focus their attention during the task. This can be achieved by referring to two stages of post-task activities. During the first stage of the post-task phase learners could be asked to repeat the task performance "publicly", perhaps in front of the other learners, or the teacher or even while

being video recorded. Skehan (1996) claims that if learners are made aware of an audience, they will focus more attention to their language production than they would with no audience presence. He argues further that when learners are told, prior to task performance, that they may later be requested to perform the task in front of an audience, their attention is drawn to language structure and accuracy when performing the task (for the first time). By redoing a task, learners will have more processing capabilities at their disposal for attention to language, as less attention will be required for cognitive processing (Skehan, 1996: 56). As a result, this could lead to more accuracy and fluency as well as improved language production. In the second stage of the post-task activities, learners may be requested to repeat tasks already done or to perform tasks that are similar to earlier tasks. Skehan's justification for the second post-task stage is that this phase is essential for the purposes of reflection and consolidation on the part of the learner. By this, both learners and teachers can collaborate to construct and achieve for a balanced task goal.

Similar to three-stage methodology proposed by Skehan (1996), Willis (1996: 38) too suggests three components of the task-based learning framework. These include, the pre-task stage, task cycle phase and the language focus stage. In the pre-task stage, the topic and the task are introduced to learners by highlighting new vocabulary and phrases and assisting learners to understand what is required of them to complete the task. The task cycle stage consists of a further three subcomponents, namely, the task where learners do the actual task in pairs or groups while the teacher observes the learners. Then planning takes place where the learners prepare to report to the entire class on how they completed the task, what decisions they have finalised. The last of the sub stages is the actual reporting of the task. This can be done as an oral presentation or exchange of written reports where results can be compared. In the language focus stage, the analysis and practise sub stages take place. During this phase, students can examine and discuss specific language features of the text and practise new words and phrases.

Another three-stage proposal towards a methodological sequence of task-based instruction is that by Robinson (2001a: 293). Robinson proposes that the methodological sequence of task components begins with language input at the initial stage, the pedagogic task performance as the second stage and then at the last stage by target task assessments. Robinson (2001a) points out that proactive options in FonF are linked to the language input phase whereas during the pedagogic task performance stage, reactive options in FonF can be used. At this stage, emphasis should be placed on communication and content and attention to form should be reactive in nature. Recasts could be provided by teachers should learners make errors. The final stage of the methodological sequence proposed by Robinson is the assessment of target task performance.

Ellis' (2003a) proposal provides a much detailed interpretation regarding methodological procedures for task-based instruction. He examines two types of procedures i.e. lesson designs and participatory.

- **Design procedures of a task-based lesson**

Similar to the proposals of Skehan (1996) and Robinson (2001a) discussed above, Ellis also proposes that a task-based methodology should consist of a three-stage methodology, i.e. pre-task phase, the during-task phase and the post-task phase. Ellis describes his framework for designing task-based lessons as follows:

Table 2-0-5. framework for designing task-based lessons (Ellis, 2003a: 244)

Phase	Examples of options
A Pre-task	framing the activity e.g. establishing the outcome of the task planning time doing a similar task
B During task	time pressure number of participants
C Post-task	learner report consciousness raising repeat task

In the **pre-task phase**, the language teacher has multiple options in order to prepare learners to perform the actual task that will encourage acquisition. Ellis (2003a: 244) cites Lee (2000) when he suggests, “framing” the task by providing learners information about the activities and tasks for task performance in the introductory phase. Ellis (2003a: 244) is in agreement with Skehan (as discussed above) stating that during the pre-task phase, emphasis should be on language and/or content. Attention drawn to the language during this phase, whether explicit or implicit, will relief learners’ attention during performance of a task to assist them focus more on linguistic factors.

Four alternatives for the pre-task phase have been proposed by Ellis (2003a). The first involves teachers assisting learners in **performing a task** that is of the same kind as and with similar content to the main task. The teacher has multiple methodological options at his/her disposal for the pre-task phase. For instance, the teacher could involve the whole class and perform a task with all learners

working together and contributing. Learners could also be provided a task where individual work is required, having them focus on language structures and/or task content. The second alternative of this phase is **providing learners a model of the task** that they will need to perform later in the lesson. This could be in the form of written text or an oral or even a recording of others performing a similar task. By observing others perform, a similar task will assist learners with planning their own performance through various strategies, content and language structures, and vocabulary competencies for performing important language functions. The third option for pre-task activities is the presentation of various options of **non-task preparation activities** that teachers can select from. The aim of the non-task preparation activities is to reduce cognitive or linguistic demands placed on the learner during the performance of task. Regarding the cognitive demands, brainstorming and mind maps can be used to address this issue. With linguistic demands, Ellis (2003a: 247) indicates that activities focusing on vocabulary, instead of grammar is viewed as more useful for the successful task performance. Ellis (2003a: 247) refers to the works of Newton (2001), as he suggests three options of non-task activities that can be utilised to assist learners with vocabulary. These could include requesting learners to predict vocabulary linked to the topic of the task; asking learners to look up meanings and definitions of words and sharing the information with others; and lastly requesting learners to match a list of words with their definitions. The fourth and last alternative for the pre-task phase involves **strategic planning**. According to Ellis (2005b: 3) strategic planning involves learners preparing to perform the task by taking into consideration the content that will be required to encode and how to use this content.

Skehan (1996) points out that providing learners with opportunities to plan will yield greater fluency. With strategic planning, learners can be given planning time to perform the task. This can be achieved either through teacher-led planning, individual learner planning or group/pair work planning. A variety of options is available for teacher use to guide learners' attention to form and content. In terms of attention to form, the teacher may request learners to consider the kinds of language structures they would require to use during performance of task. In addition, the teacher can help learners in identifying certain important structures and could explain these where necessary, even providing rules if deemed necessary and appropriate. The teacher is also able to channel the learners' attention on to different aspects of language use. Ellis (2003a: 248) points out that another matter of interest regarding strategic planning is how the amount of time allotted could affect task performance. According to Ellis (2003a: 248), the time could vary from one to ten minutes, depending on the circumstances.

To sum up these four alternatives for the pre-task phase, Ellis (2003a) mentions that current research has left some critical questions unanswered regarding the effects that certain methodological

procedures made during the pre-task phase will have on task performance. The onus lies with teachers who will have to create conditions and opportunities to ensure which options will make tasks produce best outcomes in their specific instructional context. Ellis (2005b: 18-19) points out that research on task rehearsal has shown that learners' performance do yield greater fluency and complexity in the second performance. Disappointingly, these effects did not manifest when learners were required to perform a new task of the same type. This fourth option of strategic planning is revisited in Chapter 3 to explore how it affects the pre-task planning phase in a CALL environment.

The **during-task phase** consists of two kinds of methodological options, i.e. task performance options and process options. While the former relates to the performance of the task that the teacher can take before the actual task performance, the latter concerns online decision making that both the teacher and students can take during actual performance about how to perform the task.

- **Task performance options**

As mentioned above, Ellis (2003a: 249) proposes the task performance options as concerning decisions that the teacher can take prior to performing the actual task and the effect it will have on the task being performed as well as the outcomes of the task. Ellis (2003a) states three options, i.e. time pressure, access to input data and incorporating a surprise element in task performance. Allowing learners to perform a task under time pressure will affect the type of language learners produce. Ellis (2003a: 250) emphasises that when teachers allow no set time limit, learners are likely to produce accuracy in a task performance. Whereas if teachers do set a time limit, fluency on task performance is encouraged. Task performance options that concern decisions about whether to allow learners to **access to input data** when performing a task can also affect learners' performance. Learners permitted access to input data will influence the complexity of the task. Tasks will be easier to perform if supported by pictures or texts for instance. If not, then this may lead to learners using greater attentional capacity for content rather than for language, resulting in less complex and less accurate language use. The third and final task performance option includes a surprise element during task performance (Ellis, 2003a: 250). During the pre-task phase or at the introduction of the task, learners could be provided additional information. The surprise element could also be provided to learners midway through the task. This would allow learners to alter their strategies they may have already planned. Ellis (2003a: 251) mentions that including a surprise element could assist learners' "intrinsic interest in a task".

- **Process options**

According to Ellis (2003a: 251), process options refers to online decisions teachers and/or learners may have to take during the performance of a task. Ellis mentions that the way in which these decisions, taken by the teacher and learners, on how to conduct a task, are largely influenced by prior experiences of teaching and learning and their personal understanding of the present task. The beliefs held by the teacher and learners about how language learning takes place will affect the types of process options decided upon during the performance of a task. Different process options may be selected should teachers and/or learners opt for a more traditional view of language teaching as compared to a more current view that considers the value of the principles of task-based instruction. In essence, a traditional view of language teaching and learning will encourage a more form-focused pedagogy, where language form is treated explicitly and is viewed as a vital part of instruction. On the other hand, a task-based pedagogy will treat language as a tool and place more emphasis on meaning, content and communication. In the following table, Ellis (2003a: 253) contrasts the two sets of classroom processes, i.e. stereotypical classroom processes in a traditional form-focused pedagogy and task-based pedagogy.

Ellis (2003a: 252) points out that the processes within a task-based pedagogy are a “rarity even in classrooms where the teacher claims to be teaching communicatively”. There are two reasons why this situation may occur. The first reason is that teachers and learners may find it difficult to adjust themselves in a task-based pedagogy and to move away from the traditional teacher-learner roles. Aspects such as topic development and turn taking are usually teacher-controlled in a traditional form-focused pedagogy. A second explanation provided by Ellis is that in a classroom context teachers and learners may experience difficulty in adjusting to language as a tool and for adopting the role of language users, as compared to traditional teacher and learner roles (Ellis, 2003a: 252). Consequently, this influences the kind of language learners produced in the classroom. That is why a call for task-based teaching and learning would be the ideal platform for both teachers and learners to embrace (Long, 2015 & 2016).

According to Skehan et al. (2012: 171), although it may be an important aspect of task-based teaching, however “simply completing the task is not sufficient”. He stresses that FonF has to be included during the performance of a task. It is broadly accepted that the inclusion of FonF during task performance should be reactive and incidental as discussed in earlier sections. However, a study conducted by Ellis et al (2001) found that FonF was not only reactive but a proactive phenomenon as well. During task performance, emphasis should be placed on input, process and outcome/communication.

Table 2-0-6. Stereotypical classroom processes in traditional form-focused pedagogy and task-based pedagogy (Ellis, 2003a: 253).

Traditional form-focused pedagogy	Task-based pedagogy
Rigid discourse structure consisting of initiate-respond-feedback exchanges	Loosely discourse structure consisting of adjacency pairs
Teacher controls topic development	Students able to control topic development
Turn-taking is regulated by the teacher	Turn taking is regulated by the same rules that govern everyday conversation, i.e. speakers can self-select.
Display questions, i.e. questions that the questioner already knows the answer to	Use of referential questions, i.e. questions that the questioner does not know the answer to
Students are placed in a responding role and consequently perform a limited range of language functions	Students function in both initiating and responding roles and thus perform a wide range of language functions, e.g. asking for and giving information, agreeing and disagreeing instructing
Little need or opportunity to negotiate meaning	Opportunities to negotiate meaning when communication problems arise
Scaffolding directed primarily at enabling students to produce correct sentences	Scaffolding directed primarily at enabling students to say what they want to say
Form-focused feedback, i.e. the teacher responds implicitly or explicitly to the correctness of students'	Content-focused feedback, i.e. the teacher responds to the message content of the students' utterances
Echoing, i.e. the teacher repeats what a student has said for the benefit of the whole class	Repetition, i.e. a student elects to repeat something another student or the teacher has said as private speech or to establish intersubjectivity

The use of explicit and implicit procedures for focusing on form in the during task stage is one of the ways suggested by Ellis (2003a). Ellis (2003a: 256) notes that methodological options available to both learners and teachers for inclusion of these techniques. For instance, the teacher can respond to FonF episodes either by initiating FonF or reacting to learners' utterances with an error or learners could request for clarification or assistance. The following table illustrates some of the implicit and explicit techniques that can be utilised by task participants during task performance.

Table 2-0-7. Implicit and explicit techniques for focusing on form during the task (Ellis, 2003a: 257)

Type of technique	Interactional device	Description
Implicit	1 Request for clarification	A task participant seeks clarification of something another participant has said, thus providing an opportunity for the first participant to reformulate.
	2 Recast	A task participant rephrases part or the whole of another participant's utterances.
Explicit	1 Explicit correction	A task participant draws explicit attention to another participant's deviant use of a linguistic form, e.g. "Not x but y."
	2 Metalingual comment/question	A task participant uses metalanguage to draw attention to another participant's deviant use of a linguistic form, e.g. "Past tense not present tense."
	3 Query	A task participant asks a question about a specific linguistic form that has arisen in performing the task, e.g. "Why is 'can' used here?"
	4 Advice	A task participant (usually the teacher) advises or warns the use of a specific linguistic form, e.g. "Remember to use the past tense".

Table 2-7 shows that there are two procedures available to teachers and learners concerning implicit FonF. The first technique concerns one participant requesting for clarification of another participant or with the second technique, a participant could rephrase what another participant has uttered. Explicit FonF offers more techniques to be used. A participant can make explicit correction used by another participant, either with or without metalanguage. An explicit query is a third option where a participant asks about a particular linguistic feature that arises during the performance of task. The option of advice that Ellis proposes for FonF is usually an advice provided by a participant (usually a teacher) regarding a specific form that arises during task performance.

The process options discussed above cannot be prescribed as noted by Ellis (2003a: 258). He acknowledges that these options are "challenging" and even refers to Skehan who states, "fine tuning tasks while they are running is not easy". Teachers grapple with performing process options because vital decisions need to be considered and implemented into real-time, together with many other factors that play a role during task performance. The post-task stage is the last phase of the task-methodology proposed by Ellis (2003a: 258). This phase consists of three major pedagogical goals, i.e. offering an

opportunity for learners to repeat the task; encourage learners to reflect on the task performed and to encourage FonF.

According to Ellis (2003a: 258) allowing learners to redo a task is beneficial in several ways. Research studies cited by Ellis found that when learners repeat a task, they are likely to increase complexity to articulate propositions more clearly and to become more fluent. Within the post-task phase, learners may be allowed to repeat the initial performance under the same conditions or they may be allowed to do so when conditions are slightly changed such as in small or large groups or publicly or with different group members (Ellis, 2003a: 258-259).

The next pedagogic goal in this phase is providing learners a chance to reflect on the completed task. Feedback can be done in several ways. For instance, learners could submit a report either in writing or in a verbal feedback given to the teacher. Learners may be asked to summarize the outcome of the task, to reflect on performance strategies when faced with communication difficulties and to evaluate their own performance in terms of language use (Ellis, 2003a: 259). Moreover, Ellis (2003a) points out that allowing learners to reflect and evaluate their performance will add value to developing metacognitive strategies such as planning, monitoring and evaluating, all of which are essential to language learning. He stresses further the importance of getting learners to evaluate the task itself, as the information gathered from learners will assist in planning in the future.

The third and final pedagogic goal proposed by Ellis (2003a: 259) is the attention to FonF. Ellis (2003a) notes the importance of FonF during the post-task stage as learners can attend to issues relating to accuracy, which is frequently set aside in favour of fluency during the performance of a task. On completion of the task, additional explicit attention to form can occur. Ellis (2003a: 260) points out that more explicit attention to form can take place during all phases in a task-based lesson but notes that in the pre- and post- task stages focus will be a focus on *forms*, and the during-task stage will focus on *form* as was discussed earlier in section 2.4.1. Commenting on the importance of focus form in during-task option, Ellis (2003a: 260) states that “it is quite compatible with a primary focus on message content, which is the hallmark of a task”. A selection of grammatical forms that should be focused on can be attended to by means of the learners’ language use during the performance of a task. Ellis (2003a: 260) points out that the teacher should focus on linguistic form that learners used incorrectly while performing a task as well as on the forms that learners failed to use, but which are considered “useful” or “natural” to use during task performance.

There is a range of possibilities available to the teacher for focusing on form/s during the post-task phase. Ellis (2003a) recommends a review of errors, consciousness-raising task, production-practice activities and noticing activities as some of the options. A **review of errors** can be achieved when the teacher notes down errors that learners make during task performance. In the post-task stage, these errors can be placed on the board and the whole class could be requested to assist in correcting them. If the task performance was audio or video recorded, then both the teacher and learners can also pay attention to forms that are recognized during the replay of the recording (Ellis, 2003a: 260-261). The use of **consciousness-raising tasks** during the post-task phase is another option for focusing on form/s. For instance, learners could be presented with utterances recorded during the performance of a task containing similar errors. Learners could be requested to identify the inaccuracies, correct the sentences and work out a possible explanation as to why the sentences were incorrect (Ellis, 2003a: 261). Upon identifying and correcting the mistakes, learners could be provided more traditional **production-practice activities**. Learners could be requested to repeat sentences that contain the corrected use of a form, to complete cloze exercises, to correct jumbled sentences or to read dialogues with selected forms. The option of noticing activities is the final option suggested by Ellis for FonF during the post-task phase. Ellis (2003a: 261) refers to the works of Fotos (1994) who used dictation exercises as a way to allow for noticing of specifically targeted linguistic forms.

In addition to the methodological stages proposed by researchers Skehan (1996), Ellis (2003a), Willis (1996) and Robinson (2001a), Long (2015) outlines ten methodological principles that have influenced several task-based syllabus designs. The methodological principles refer to a set of instructional design guidelines based on SLA theory, which language teachers can incorporate during the implementation stage of task-based instruction. Long (2015: 301) refers to these principles as “language teaching universals” for task-based pedagogy, which are modified to pedagogical procedures in terms of various contextual factors such as learners’ proficiency levels, age and cognitive styles. The ten methodological principles proposed by Long (2015: 300) are:

- Use task, not text, as the unit of analysis
- Promote learning by doing
- Elaborate input (no simplification)
- Provide rich input
- Encourage inductive “chunk” learning
- Focus on form
- Provide negative feedback

- Respect learner syllabi and developmental processes
- Promote cooperative collaborative learning
- Individualize instruction (based on learners' communicative needs)

These principles have been particularly influential in task-based CALL syllabus designs. Studies conducted by Gonzalez-Lloret (2003) and Whyte (2013) show how tasks can be designed to support L2 learning by successfully implementing these methodological principles in a task-based CALL syllabus design. Three of the ten principles have also been applied to the current study, which is further explored in Chapter 5.

2.7 Task assessment

The previous sections of this chapter discussed the many opportunities and advantages for adopting TBLT in language instruction. It has been advocated that tasks be considered the ideal methodological tool for the use of L2 classroom instruction. It was also argued that tasks afford many opportunities for engaging learners to interact with each other. Because of the interaction, it is assumed that opportunities for negotiation of meaning are generated. To complement and support effective teaching and learning with tasks as a methodological tool, assessments too need to be aligned with task-based instruction. In other words, the logical way forward is the inclusion of tasks as a form of assessment. This section explores key issues concerning the use of task as an assessment tool.

Task-based language assessment (henceforth TBLA) has prompted much attention over the past decade. Key considerations on TBLA have been well documented and different views on the most appropriate way to assess task-based abilities and the characteristics of TBLA are evident in literature (Chalhoub-Deville, 2001; Ellis, 2003a; Long, 2015 & 2016; Norris, 2016; Nunan, 2004; Skehan, 2001). Continuing research in TBLT has prompted the development of suitable testing assessment tools for this approach to pedagogy (Norris, 2016). The use of tasks has proven to offer considerable benefits for L2 assessments. The inclusion of tasks into the assessment design has been viewed to better represent learners' abilities to use the target language. Moreover, tasks can offer a meaningful platform for both L2 learners and teachers to "examine, understand and improve language learning endeavours" (Norris, 2016: 230). Evidence in support of the value of TBLA to language assessment has not only been limited to classroom-based testing but has also expanded and combined with technological affordances (Norris, 2016: 232).

Assessment tasks are defined as performance-referenced tasks, which involves “eliciting and evaluating communicative performances from learners in the context of language use that is meaning-focused and directed towards some specific goal” (Ellis, 2003a: 279). Similarly, Nunan (2004) defines task assessments as learners demonstrating an ability to utilize the language. Specifically, with task-based assessments, learners are required to perform a task that simulates a performance needed to be accomplished beyond the classroom context (Nunan, 2004: 145). Nunan (2004: 138) further explains that one of the fundamental principles in curriculum design is that assessments should reflect what has been taught. It is evident from the above definitions on assessment tasks, that they should be aligned to the pedagogical tasks implemented in classroom instruction.

Research into the use of tasks for assessment indicates that task features that are considered for the design of tasks are equally important for the design of assessments. This is to ensure proper alignment between pedagogical tasks and assessment tasks. Research on proposed task features were investigated in earlier sections of this chapter. Sections 2.3.5.1 – 2.3.5.3 described detailed proposals on task features by Skehan, Robinson and Ellis respectively, which are essential for the grading and sequencing of tasks. Similarly, these task features should be taken into account for the purposes of assessment task design. Skehan (2001: 182) points out task selection decisions may affect learners’ performance in terms of rating the students and the task type selected. He maintains that both pedagogical tasks and assessment tasks should utilize similar or the same task features. Skehan (2001) further argues that it could be disadvantageous to learners if assessment tasks differ a great deal from pedagogical tasks that they were exposed to.

Given the relevance associated with task features on enhancing learners’ L2 development, Chalhoub-Deville (2001) states that a similar relationship is shared with L2 assessments. Chalhoub-Deville (2001: 214) stresses the relevance of three interrelated characteristics namely, learner-centredness, contextualisation and authenticity that influence assessment tasks which are also shared by task-based features. Chalhoub-Deville (2001: 214) refers to learner-centred assessments that are designed in a way to emphasise interaction that should encourage learners to express their own meaning and language and use their prior knowledge and experiences when utilized with tasks. In addition, such assessments encourage learners to be autonomous. Concerning contextualisation, Chalhoub-Deville (2001: 215) points out that the reasoning given for contextualisation being considered important in L2 teaching is the same with assessment tasks. It is essential that the context in which the assessments are presented to learners should also be evident in real-life communication in order for learners to use the target language effectively. Considerable interest is directed to the attribute of authenticity in both

TBLT and TBLA. Chalhoub-Deville (2001: 216) refers to authenticity as establishing a direct connection between language use and activities used in both pedagogy and assessment. Assessments that replicate real world tasks are considered beneficial for learners as such tasks could be a signal for successful task performance in a real world context. This point has also been emphasised by Long (2015: 364) who asserts that task-based criterion-referenced performance tests should place emphasis on the learners' abilities to perform the real tasks or simulations and not the language as object. However, according to Keck and Kim (2014: 214) task-based performance assessments that make full use of authenticity and those that are designed to resemble real-world also provide teachers the opportunity to observe how learners use grammar as a resource for achieving task goals. Moreover, these tasks also allows teachers to examine students' control over forms and meanings required for successful task performance.

A typical example of a task-based criterion-referenced performance assessment is the Objective Structured Clinical Examinations (OSCEs) used as an assessment tool to measure students' abilities to conduct a history taking of a patient presenting a specific complaint. The benefits of such assessments is that students are given the opportunity to conduct a clinical history taking with an isiZulu-speaking simulated patient that allows students to put into practice what was learnt in the classroom. The clinical history taking involves simulating a scenario of common health conditions that are prevalent amongst patients. Although it may be challenging to implement with large groups of students, it does provide learners the opportunity to practise such scenarios in isiZulu and prepares students for the language challenges, which are likely occur in their real world. A study by Matthews and Gokool (2018) emphasises the importance of including an isiZulu history-taking station in the OSCE assessments in order to reinforce isiZulu vocabulary and language structures learnt in the classroom. Students are assessed on a specific task related to the content and not the language. The OSCE assessments correlates with Long's view on task-based performance tests in TBLT, in that it determines whether learners are able or unable to perform target tasks successfully in a real world situation (Long, 2015).

2.8 The use of tasks in language for specific purposes (LSP)

In the previous sections of this chapter, issues related to TBLT and its connection to task complexity and focus on form have been discussed. It is well documented that a task-based syllabus together with LSP constructs a foundation for meaningful language learning to take place (Basturkmen, 2006 & 2010; Chaudron et al., 2005; Long, 2015 & 2005; Whyte, 2013). Long and Crookes (1993) have strongly advocated for the adoption of task-based instruction for specific purposes language course

since it places emphasis on authentic use of the language that focus on real-life situations. The inclusion of tasks in specific purposes language courses has also been favoured by Chanier (1996), who supports the integration of multimedia in such courses that can enable a communicative approach to teaching. In addition, recent researchers suggest that synergy between TBLT and CALL in a LSP syllabus is beneficial (Gonzalez-Lloret, 2003; González-Lloret & Ortega, 2014; Thomas & Reinders, 2010). This could be achieved through a task-based needs analysis that is essential in identifying language learner's real-world technology-mediated tasks (Park & Slater 2014:96).

In this section of the chapter, the main characteristics in TBLT research on teaching language for specific purposes are explored. A definition of LSP is provided, followed by a discussion on the different types of specific purposes syllabi. Thereafter, the role of needs analysis is discussed, including discourse, genre analysis and speech acts. The section concludes with a discussion on the conditions required for LSP courses and the objectives occurring in language for specific purposes syllabus design.

2.8.1 Definition of 'Language for Specific Purposes'

LSP is a broad term that includes other types of specific purposes courses. These include 'language for academic purposes' and 'language for vocational purposes' as well as 'language for occupational/professional purposes'. Dudley-Evans (1997: 58) draws on Robinson's (1991) view by stating that the overall accepted definition for language for specific purposes is that it is "goal-oriented and based on needs analysis". He further adds that LSP courses are controlled by time limits and are usually designed for the adult learners in mind.

In order to differentiate the linguistic and functional nature of various contexts of language usage that would be considered a specific purposes language course, Tudor (1997: 91) refers to the term "markedness". According to Tudor (1997: 91), "markedness" refers to "an implicit notion of those domains of knowledge" that average first language speakers of a language are not likely to be familiar with and proposes that these notions would be the contexts that tend to be considered a LSP course and not a language for general purpose (LGP).

Even though LSP courses may consist of unique features, they also contain common characteristics that are shared with LGP courses. Being able to achieve communicative competence is seen as the main aim common to both courses. Chanier (1996: 2) refers to 'communicative competence' to

comprise the following competencies; formal/grammatical competence, sociolinguistic/sociocultural, discourse competence, referential competence and strategic competence. It is essential that when learning a language for a specific purpose, none of the above competencies can be overlooked (Chanier, 1996). Other important features common to LSP include needs assessment, content-based instructional methods and content-area informed instructors (Belcher, 2006: 135).

2.8.2 The role of needs analysis in LSP course design

One of the key elements in preparing learners to use a language within a target learning environment when designing a LSP course is that the syllabus is based on identifying the needs of the learners (Basturkmen, 2006). A typical LSP course is usually placed within a specific timeline; thereby restricting the variety of the target language. Needs assessment is therefore used to identify the specific variety of the target language learners will find motivating and relevant to use in the target situation. According to Garcia Mayo (2000: 39), the process of needs analysis is complicated as it not only considers the target situation needs (i.e. language use) but also the learning needs (i.e. language learning) should be given due consideration. Hyland (2009: 204) reiterates that needs analysis should consider the beliefs, values and interests that teachers hold about language teaching and learning. The mandatory process of a needs assessment can also be expanded to include the analysis of both learner and teaching context factors (Basturkmen, 2010: 34). Other important aspects to needs analysis include understanding learner goals and their background as well as their language proficiency levels. Information on institutional expectations are also relevant in need analyses (Hyland, 2009). Moreover, the methods used to conduct needs analysis should consider the changing needs of all constituents. West (1997) points out that once needs are satisfied, priorities will certainly change to create new needs and therefore a re-analysis of needs will be required to meet the requirements of all constituents involved in a LSP course.

Regarding task-based approach to LSP, the role of needs analysis is considered the first building block in the development and implementation of a TBLT syllabus (Long, 2015). Given that, TBLT endorses a learner-centredness approach to L2 learning and teaching it is essential to determine learners' individual differences and to identify what is relevant to the learner to use the target language in a particular domain. Another important aspect of needs analysis, according to Long (2015: 89), is that course designers should recognize which goals and communicative needs are required for specific learner groups so that the syllabus design is suitable and deliverable. Long (2015: 108) advocates that the use of target tasks as the unit of needs analysis will be able to determine what students need or will

need in order to use the L2. Likewise, with the rapid inclusion of technology in LSP courses, Park and Slater (2014) investigated the use of target tasks by conducting a needs analysis to identify real-world language tasks that learners needed to undertake using their digital devices in order to enhance their language competence. Similarly, González-Lloret (2014) stresses that along with language needs analysis, syllabus designers should carry out a technological needs analysis as well, as this will assist to identify language learning target tasks that would inform the design of pedagogic tasks.

2.8.3 *Variants of specific purposes syllabus*

Hyland (2009: 209) points out there are various kinds of specific purposes programs such as a process syllabus, text-based or content-based syllabus. With the process syllabus, the instruction is essentially focused on the learning of the learner. Text-based syllabus involves genres and contexts in which learners are required to operate. Hyland (2009) points out that teachers should be able to support and guide learners to utilize correct language and genres in relevant and specific contexts. When selecting texts and tasks for a LSP classroom, learners' needs are to be taken into consideration. These tasks should then be sequenced in terms of its level of difficulty as well as the skills required to complete the task. Moreover, tasks should be sequenced according to real-world relations. Hyland (2009: 210) describes the teaching-learning cycle as being essential for specific purposes syllabi. He adds that this cycle provides learners the opportunity to make evaluations and to distinguish between the differences and similarities of language structures, language skills, language use and contexts. A key purpose of this cycle is to ensure learners reflect and critique their learning and equally important is feedback which can assist learners in the development of their language skills (Hyland, 2009: 210).

2.8.4 *Language for specific purposes*

There are different types of languages and language systems (Basturkmen, 2006: 3). When designing a language syllabus, it is essential to take into consideration the specific needs of learners and to conduct an analysis thereof. According to Basturkmen (2006: 12), language can be considered in different ways, i.e. it can either be dealt with synthetically or analytically. In addition, language can also be considered as a set of grammatical structures or as discourse structures or even as sounds. On the basis of Stern's conceptual framework, Basturkmen (2006) notes that language teaching consists of four main elements or basic building blocks, i.e. language, learning, teaching and context. Likewise, Basturkmen (2006: 13) also puts forward the framework proposed by Richards and Rodgers who identifies two main constituents that are related to the approach of LSP. These include the nature of

language and the nature of language learning. The former concerns the nature of language proficiency and basic units of language structure whereas the latter relates to the psycholinguistic and cognitive processes involved in the learning of a language as well as the conditions that encourage successful use of these processes.

2.8.5 Language systems

Basturkmen (2006: 35) refers to Hopper (1987) who states that language systems are “as a set of abstract structures present for all speakers and hearers that is a prerequisite for the use of language”. Basturkmen (2006: 35) points out the when teaching specific purposes, language systems should be in place at the start. It is essential to consider the different types of language systems when adopting a specific purpose course. Basturkmen (2006: 15) refers to two kinds of language, i.e. the common core plus and the “general purpose” language. With the first kind of language, it represents language of high frequency items that predominates all usages of languages. The second view involves language systems as having no common core language. This entails that a basic language exists in all languages and are learned in some context or another (Basturkmen, 2006: 17). Therefore, this perspective is regarded, as all language is specific purpose. There are three language systems at present, i.e. grammatical structures, core vocabulary and patterns in text organization, each of which is sequentially discussed.

2.8.5.1 Grammatical structures and core vocabulary

The concepts of grammatical structures and core vocabulary have been a part of the traditional ideas in second language teaching. For many years, teachers in language teaching have used grammar and core vocabulary as a key focus. Basturkmen (2006: 35) points out that there should be some focus on basic sentence-level grammatical structures for example, verb phrases and noun phrases in second language teaching. This should be followed by core vocabulary, which are vocabulary items that are frequently used in specific contexts and serves as a basis for future language use. Regarding lexical items for a specific course for medical students, (Datondji, 2017: 448) points out that courses intended for medical students should not only contain a list of medical lexical vocabulary but courses should be designed to ensure that students use the medical jargon appropriately in real communication contexts.

2.8.5.2 Patterns of text organization

The third language system is referred to as patterns of text organization which consists of structures underlying written and spoken texts (Basturkmen, 2006: 38). Evidently, language use within these contexts can lead to some ambiguity. Basturkmen (2006: 38) refers to Scollon and Scollon (1995) who make a comparison between external ambiguity and internal ambiguity. External ambiguity relates to the contexts in which meaning is interpreted whereas internal ambiguity would refer to learners dealing with the external ambiguity of texts via notions of schemata and scripts. While schemata would refer to knowledge that people have about certain types of events such as dining out, a script, on the other hand, refers to being knowledgeable about how these events will unfold and advance. This knowledge is shaped from the experiences that learners experience in life. Basturkmen (2006: 38) explains how familiar words can trigger learners' previous knowledge about certain events, which will eventually assist learners interpret the text and participate in the discourse.

Basturkmen (2006: 38) refers to Hoey (2001) who argues that the concepts of schemata and script may be limitless and thus it is impossible to describe each of them. Another way in which learners may interpret a text is through its internal ambiguity. Internal ambiguity relates to the ways parts of a text relate to each other. Basturkmen (2006: 38) argues that a standard set of patterns of text organization exist and have been labelled macro structures, clause relations, basic text structure and culturally popular patterns. Those who adopt this view of how one deals with the ambiguity in language, argue that one interprets the second part of an example text by referring to their own knowledge of general patterns of organization in texts. Basturkmen (2006: 39) points out that descriptions of pattern of text organization highlight what are assumed to be core features of language. For an interpretation of a text, a listener would have to follow the links between the parts and rely on one's knowledge of the ways that parts such as clauses, sentences or longer segments, are usually organised in text. The second sentence would be understood because of the event interpreted in the first sentence. A number of persistent patterns frequently identified in English for instance could include "cause-result", "situation-problem-situation-evaluation", "goal-achievement", "desire arousal-fulfilment" and "gap in knowledge-filling" (Basturkmen, 2006: 39).

2.8.6 Language uses in language for specific purposes teaching

In this section of the chapter, a description of language use and functional descriptions of language as proposed by Basturkmen is discussed. According to Basturkmen (2006: 47), the focus of language use is based on communicative purposes that people wish to achieve and how language is used in order to

acquire them. Descriptions of speech acts, genres and social interaction used in professional, workplace or academic environments form part of language use in specific purposes teaching. Within the context of this study, reference to speech acts and genres only is explored.

- **Speech Acts**

In LSP research, the identification of speech acts, also known as functions, is an essential factor used in target environments. Basturkmen (2006: 48) points out that speech acts relate to the communicative intentions of individual speakers or writers who are defined by the reason for which the speaker uses the language for instance, greeting or saying goodbye. She adds that speech acts can be either direct or indirect. With indirect speech acts, the meaning that is expressed and the meaning that is implied do not match. According to Basturkmen (2006: 53), speech acts are viewed as internally driven so that communicative purposes can be achieved.

- **Genres**

According to Basturkmen (2006: 52), a genre is interpreted as a language use and communication used in a specific community. A specific label is given to the genre when each community in which a particular genre is used, such as in the case of a medical community, which has, a genre named “case history” and teachers have the “end-of-year report”. Genres are also viewed as collective and socially derived and labelled by the community from which it develops. According to Basturkmen (2006: 55) genres are meant to change and evolve according to the needs of the community. Thus, genres are not considered “fixed and static” (Basturkmen, 2006: 55). They may be gradually modified with new information by frequently conducting needs analysis, which can be useful to the LSP course designer. Genre rules restrain the communicative choices, which include choice of lexis, syntax and content. Moreover, genres are viewed as very specific to communities in which they originate. However, Basturkmen maintains that even though genres offer learners a prototype of language used by a specific language community, individuals do challenge the use of other language structures or lexical items that go beyond their context to achieve their communicative purposes. This phenomenon correlates with task-based approach to LSP in that such occurrences could manifest during task production. Learners will use language structures and vocabulary items provided to them as part of a specific genre; however, it could happen that some learners, particularly more competent learners will utilize other structures and lexical items that they may have been exposed to in a different genres or domains.

2.8.7 *Conditions for learning in LSP courses*

Research in LSP literature indicate that it is important to consider the conditions required for language learning to occur. Basturkmen (2006: 85) points out that the two factors, i.e. acculturation and input and interaction, relate to learning conditions and the learning process involved in language learning. The first factor relates to acculturation, which is based on social considerations that learners need to be in close social proximity or contact with their target discourse communities. The second factor involves linguistic considerations and claims that provide sufficient linguistic input and opportunities for interaction to occur when learning a language.

- **Acculturation**

Basturkmen (2006) points out that acculturation is the first condition needed for language learning. She states that providing access to learners in target discourse communities will facilitate learners becoming socially and psychologically integrated into their target discourse community. As referred to by Basturkmen (2006: 85-86), a study by Schumann (1986) found that the idea of acculturation to target language groups have a substantial and controlling effect on the degree to which the learner acquires the second or target language. There are three models of acculturation, namely, **induction** which proposes that L2 learners take a LSP course before experiencing and participating in a target language. The second is the Adjunct model of acculturation whereby learners simultaneously participate in target environments and take LSP course. The third model of acculturation refers to apprenticeship or mentoring. This model concerns learners learning through direct experience in the target community. LSP instruction serves the purpose of providing support and linguistic assistance.

- **Input and interaction**

According to Basturkmen (2006: 90), the second concept aims to provide useful linguistic considerations and claims that the providing sufficient linguistic input and opportunities for interaction are conditions for learning a language. In other words, LSP courses try to create linguistic environments where plentiful quantities of input are presented to learners by allowing them to be exposed to the target language followed by providing them with the opportunity to interact with it. Basturkmen (2006: 90-91) points out that the idea of input and interaction can be traced back to the origins of Krashen's Input Hypothesis and Long's Interaction Hypothesis. In terms of Long's Hypothesis, Basturkmen (2006: 91) states that there are five considerations that inform LSP about the conditions under which language learning occurs. These include, firstly that learners can only learn what they are ready to learn. Secondly, linguistic input is necessary for learning. A third claim is that

learners negotiate the meaning of input to make it more comprehensible to themselves. In terms of this negotiation of meaning, the fourth consideration states that through negotiation of meaning, input becomes increasingly helpful because it is targeted to the specific development level of the individual learner. The fifth point therefore claims that if negotiated input corresponds to the learners' needs, then it will become intake. A further point by Basturkmen (2006: 91) points to the level of attention paid by the learners to the input will eventually lead to noticing salient language features. Basturkmen (2006: 91) refers to Schmidt (1994), who argues that more noticing will lead to more learning. In summary, principles concerning input and interaction in LSP courses should consider providing learners with ample exposure to the language use of the target language. Basturkmen (2006) emphasises that it is essential that teachers should raise learners' awareness of important language features such as forms, routines and patterns in order to learners to take notice of them.

2.8.8 LSP course design

Course design used for general language purposes do not specifically satisfy the needs of learners in a specific purpose course. In many cases, LSP teachers have to design and generate their own learning material. In doing so, a number of factors need to be taken into account when designing a LSP course. An important factor that needs to be taken into account is the extent to how narrow or wide-angled a course ought to be. Basturkmen (2006: 23) cites **Dudley-Evans and St. John (1998)** who point out that a narrow-angled course would be suitable where learners have limited needs. Whereas a narrow focus includes a few target situations, content, genres and skills, a wider-angled course can provide a large range of target situations, content and genres.

In the design of a LSP course, Chanier (1996) suggests a checklist of conditions that should be considered in a LSP course design. At the forefront of any LSP course, it should be learner-centred where communicative needs are stimulated, and learners are cognisant of their needs. Other factors that should be considered are learning styles, time allotted to a LSP course and cost of running a LSP course. Concerning time allocation, Chanier (1996) notes that the duration of a course is short and the training period should be limited. In addition to the above-mentioned factors, features that are common to LSP course design are also similar to those features of course design within a task-based communicative approach to second language teaching. Chanier (1996) proposes the use of a hypermedia computer-assisted language-learning course within a task-oriented approach. He further points out that a CALL course can be designed around tasks that correspond to the learners' LSP needs. Chanier (1996) also stresses that social-cultural dimensions in multimedia course design should be

maintained. A study by Whyte (2013) also highlights a framework for task-based teaching with the use of technology. Considering the needs of learners, this study was based on the methodological principles outlined for computer-mediated language teaching by Doughty and Long (2003). The methodological principles referred to by Whyte are further discussed in Chapter 3.

Recent research has indicated the importance of including a multimodal and integrated approach to the design of LSP course design. A study conducted by Franceschi (2017) suggests alternative classroom practises that can be implemented in a course design for the teaching of Medical English. Franceschi (2017) emphasises the importance of moving beyond the focus of merely speaking the language effectively, usually evident in LSP courses. She argues that focus should also be placed on preparing doctors to speak and behave affectively through non-verbal signs. LSP course designs that are specifically aimed at medical doctors or the professional practice thereof should include tasks that focus on enhancing doctor-patient communication that offer patient-centredness and communication associated with specific body language (Franceschi, 2017: 160). The use of authentic video-recorded medical interviews between doctors and patients can be included within LSP course designs in order for learners to observe non-verbal behaviour.

2.8.9 Objectives occurring in LSP courses

Basturkmen (2006: 133) illustrates five objectives that take place in teaching LSP. These include subject-specific language use, target-performance competencies, underlying knowledge, strategic competence and critical awareness. The first objective refers to learners being exposed to content involving subject-specific language use. Subject-specific language use is connected to the linguistic knowledge objective according to Basturkmen (2006: 134). Teaching framed around this objective is used to show how language can be used in a particular environment. Research conducted by Wharton (1992), referred to by Basturkmen (2006: 135) found that difficulties were experienced in some subject-specific language use. Findings from Wharton's study revealed that learners find difficulty in acquiring academic and professional genres because they need to develop and acquire conceptual understanding of discourse utilised in these genres. It also found that learning genres were usually mastered at a later point and that teachers find it difficult to communicate in a particular genre where learners are inexperienced to specific genres.

The second objective refers to the development of target performance, which concerns the ability to perform activities of a particular occupation. In addition, it relates to what people do with language

and the skills they need so that the goal of a language can be achieved. LSP courses are designed around fundamental skills and competencies such as the proficiency objective, in order to implement certain actions. Basturkmen points out that the link between needs analysis and the teaching to develop target performance competencies is straightforward. A need analysis is usually the initial step in order to determine the demands and expectations of the target environment. LSP courses aim to help learners meet these demands of the level of competency that is expected from them. Consider the following hypothetical scenario, a needs analysis shows a medical practitioner would be required to ask questions to elicit personal medical history. Thus, an LSP course may specify this competency as a course objective so that by the end of the course, learners will be able to ask for questions. However, as Basturkmen (2006: 136) points out there may be some difficulty in applying this idea in that only a few occupations operate around highly regulated procedures and restricted language repertoire on a large scale.

The third objective of underlying competence objective relates to the disciplinary concepts of language used by Hutchinson and Waters (1985). According to Basturkmen (2006: 137), using a L2 for work-related or study purposes not only requires linguistic proficiency but knowledge and understanding about work-related and subject-specific concepts are as important. Douglas (2000) as cited by Basturkmen (2006) stresses that specific-purpose language ability results from both specific-purpose background knowledge and language ability. The underlying knowledge, according to Stern's education objectives, is also categorized as cultural knowledge.

According to Basturkmen (2006: 138), the fourth objective is that of strategic competence. Referring to Douglas (2000), Basturkmen (2006) reports a three-part model of specific-purpose language ability, consisting of language knowledge, background knowledge and strategic competence. Douglas (2000) points out that strategic competence acts as a mediator between the external context and the internal language and background knowledge that is required to respond in a communicative context. Strategic competence can be viewed as a link between the language context and language knowledge as well as a means to enable language knowledge and content knowledge to be used in during communication. Teaching towards the development of strategic competence should aim to make use of the learners' pre-existing knowledge of the language and attempt to provide many opportunities for them to utilise this knowledge in the target language itself. The strategic competence objective, in this sense, is linked to Stern's (1992) linguistic categorization (Basturkmen, 2006: 141).

The fifth objective refers to critical awareness that involves teaching learners the norms and practices concerning specific target communities. Basturkmen (2006: 141) emphasises that teachers should assist learners adjust into specific contexts through teaching them the correct behaviours, knowledge and communicative use so that they act appropriately in particular communities. She further adds that learners should be made aware of the negative aspects of the community and aim to encourage them to change their attitudes positively in order to have better connections with them in such communities. The critical awareness objective can be linked to the cultural knowledge and the affective objectives in Stern's (1992) classification as cited by Basturkmen (2006).

2.8.10 Final remarks on LSP

It can be concluded that LSP is regarded as a multi-dimensional field of language study that requires well-established decisions on various critical issues. In order to design a successful LSP course, the information elicited from the needs analysis is a crucial element. There are many challenges that teachers and course designers may face when designing a LSP course but more importantly being able to construct and present such courses that consider the specific needs of learners, the requirements of good task-based language teaching is also vital.

2.9 Conclusion

This chapter described the various different aspects of task-based instruction to second language teaching, followed by an overview of ideas and options in literature regarding second language course for specific purposes. It is concluded that task-based language pedagogy is a method based on groundbreaking theoretical underpinnings and views the use of tasks has the cornerstone for its success. The inclusion of FonF, either implicitly or explicitly also was seen as an ideal platform for promoting accuracy of language structures. Furthermore, a discussion on communicative language teaching as part of task-based language teaching was also emphasised, as it aims to encourage and support learners' ability to communicate in outside or real-world contexts. The importance of grading and sequencing of task types according to the various classification were also investigated. Factors relating to cognitive complexity of tasks were considered as a fundamental notion in this regard. A further detailed investigation of analysing tasks based on task complexity (i.e. interactional complexity, cognitive complexity, syntactic complexity and the descaling of tasks) is reviewed in Chapter four of this study.

Section 2.8 of this study investigated the issues concerning the use of tasks in a specific purposes course. It was found that when teaching within a LSP context, time is limited therefore only the core grammatical structures and vocabulary can be taught. The issues on appropriate behaviour and language use are essential in a specific target context. In addition, the inclusion of technology within a LSP course is another area that is further discussed in the subsequent Chapter four.

CHAPTER 3

KEY CONCEPTS AND ISSUES IN COMPUTER-ASSISTED LANGUAGE LEARNING (CALL) RESEARCH

3.1 Introduction

The integration of computer-assisted language learning (CALL) within a second language learning and teaching, including a task-based specific syllabus has become an integral part in many educational contexts. Various CALL tools are being used to present, support and evaluate material to be learned or to create situations where teachers and students can interact with each other and establish contact in the world (Meskill & Anthony, 2010; Stockwell, 2012a). These technological tools allow for the use of audio and visual clips, graphics and 3D images. Even though there is a plethora of technological features at our disposal, CALL in a second language curriculum or syllabus is not just confined to the use of technology but, more importantly relates to the question of how effective the inclusion of CALL is, in enhancing language skills development (Levy & Stockwell, 2006b; Stockwell, 2012a). Referring to section 2.2 of Chapter 2, it is important to distinguish the terms ‘curriculum’ and ‘syllabus’ in CALL environment as well. The term ‘curriculum’ refers to a detailed complicated process that outline a broad overall plan for teaching and learning that includes the learning outcomes needed to be attained. On the other hand, the term ‘syllabus’ refers to one component of the curriculum development, in that it specifies the learning content of a course and provides an inventory of what will be taught and assessed (Richards, 2001 & 2013). Salaberry (1996: 7) asserts that the pedagogical effect of the CALL tools used in second language acquisition is reliant on a specific theoretical or methodological approach which guides its use. Chun, Kern & Smith (2016: 77) emphasises that the inclusion of technology in language teaching should ensure that it supports specific learning goals and not be viewed as using technology in itself.

The concept of affordances is well connected to CALL as it typically refers to the possibilities offered by technology (Blin, 2016). The term affordance, originally coined Gibson, is not only viewed in terms of technological and interaction-design aspects but is considers educational and language affordances as well. Language learning in a technologically based environment is complex and dynamic and therefore affords learners diverse opportunities. Integrating technology into second language learning and teaching involves a “combination of technological, social and educational affordances” (Blin, 2016: 55).

Research has indicated that appropriate integration of technology in second language learning and teaching has a positive influence on the development of the learners' language skills (Hubbard & Romeo, 2012; Meskill & Anthony, 2010). It is therefore, essential that syllabus designers ensure that CALL syllabi are designed, implemented as well as evaluated within the paradigms of second language acquisition principles (Chapelle, 1997 & 1998; Doughty & Long, 2003; Dunkel, 1991; Egbert et al., 1999; Garrett, 1998; Hubbard, 1996 & 2009; Levy & Stockwell, 2006a). In other words, what is required is a well-researched CALL methodology to maximise the effectiveness of incorporating CALL in the second language classroom in a manner that promotes second language acquisition or development including grammar-based development with emerging technologies (Collentine & Collentine, 2015; Gonzalez-Lloret, 2003; González-Lloret & Ortega, 2014). Referring to the definition of the concepts second language 'acquisition' and 'development' proposed by Larsen-Freeman (2015: 493) in Section 1.2 of Chapter 1, the term 'acquisition' refers to language a 'commodity' to be acquired or "something that gets taken in". Larsen-Freeman (2015: 493) further expands that language acquisition is a process of taking in of language structures as a mental act and then doing something with them. On the other hand, 'development' is an ongoing process of change over time that is applied to language but also the learner (Larsen-Freeman, 2015: 500). A study by Scholz and Schulze (2017), which examined digital gaming trajectories on language learners highlighted that focus should be on gaming processes and second language development instead on learners' perceptions on the validity of the game. Therefore, it is important to consider the second language development of learners in a task-based CALL specific purpose syllabus.

Moreover, decisions relating to the incorporation of CALL into a second language syllabus should be guided by established second language acquisition methodological principles. An outline of Doughty and Long's (2003) ten methodological principles for consideration in task-based CALL syllabus was outlined in Section 2.6. Some studies have shown successful integration of CALL and TBLT by implementing these methodological principles proposed by Doughty and Long (Gonzalez-Lloret, 2003; Park & Slater, 2014; Seedhouse, Preston, Olivier, Jackson, Heslop, Balaam, Rafiev & Kipling, 2014). Chapelle (1997) suggests further that the interactionist approach and a discourse analysis could be useful for the design and evaluation of CALL activities. Input enhancement, interaction and linguistic production like focus on form can also be extended to technology (Chapelle, 2003: 40). In contrast, Skehan (2003: 404) argues that exposure to input only is insufficient, emphasis should be placed on structured opportunities for learners to focus on linguistic form. However, recent studies show that language learnt via computer-assisted task-based instruction (CATBI) enhance overall

language production as opposed to computer-assisted form-focussed language instruction (CAFFI) (Arslanyilmaz, 2013).

Communicative CALL includes the use of computer-mediated communication (CMC) which refers to synchronous (real-time chats and instant messaging) and asynchronous (emails, bulletin and discussion boards). These CMC tools are widely used within L2 learning and teaching to enhance learners' second language development (Levy & Stockwell, 2006b; Salaberry, 1996). Studies suggest that successful implementation of CMC tools in CALL is determined by strong "pedagogical objectives, knowledge of the technological options and an awareness of the needs, goals and skills of the learners" (Levy & Stockwell, 2006b: 84). In addition, the type of task such as jigsaw tasks may also have implications for task designs as well as for CMC learning environments (Brandl, 2012). Research also shows that synchronous communication technologies includes 'joint attention'. With emerging new technological platforms available, researchers O'Rourke and Stickler (2017) include a social-psychological dimension to synchronous communication. These researchers claim that synchronous communication is a joint activity where both individual and joint attention unfold meaning (O'Rourke & Stickler, 2017: 3). Other benefits of using synchronous tool not only benefits digital skills but also develops learners' intercultural communication competence (Canto & Ondarra, 2017; O'Rourke & Stickler, 2017).

Aside from CMC, 'technology-mediated TBLT' has also featured recently (Collentine, 2010; González-Lloret & Ortega, 2014; Park & Slater, 2014; Thomas & Reinders, 2010). Several SLA researchers have emphasized that TBLT could be used as a framework to organise technological design for language learning (González-Lloret & Ortega, 2014; Park & Slater, 2014). Both fields of TBLT and CALL seem to share mutual interests (González-Lloret & Ortega, 2014: 3). The question that remains to be answered is how to integrate new technologies with language tasks, which can be used to organize TBLT in second language CALL syllabus. Further to this, it is essential to distinguish between **technology-enhanced** second language teaching and **technology-mediated** second language teaching. According to González-Lloret (2016: 134) technology-enhanced teaching concerns the inclusion of single activities at distinct intervals during a language lesson whereby technology is not given centre stage in the curriculum. With technology-mediated teaching, on the other hand, technology plays a fundamental role in language learning. Technology is not seen as a tool but rather "it shapes the way the learning is structured and it is central to the curriculum, from the conceptualization of a curriculum based on the needs analysis that includes technological needs, to materials development, and to the inclusion of technology instruction" (González-Lloret, 2016: 134).

As mentioned in Chapter 2, needs analysis forms the bedrock of any syllabus (Heift & Schulze, 2015; Park & Slater, 2014; Tsai, 2013). In technology-mediated TBLT as well, needs analysis addresses both the language skills needed to complete the tasks as well as the “informational and multimodal digital skills” required to effectively engage with the technology (González-Lloret & Ortega, 2014: 23). Moreover, needs analysis assists in gathering data about what innovations and technological tools are most suitable for the syllabus and inform language teachers about the required training for both students and teachers to be able to use them effectively and successfully.

The issue on diversity in learners and in learner training is an important factor to consider and has been well documented (Hubbard & Romeo, 2012; Stockwell, 2012a). Learner training and the development of autonomy are essential towards further understanding the processes in CALL (Hubbard & Romeo, 2012). CALL can provide numerous advantages for the development of self-paced, autonomous and individualized learning, feedback and evaluation (Chapelle, 2010; Gai, 2014; Heift & Schulze, 2015; Tsai, 2013; Whyte, 2013). However, constraints and challenges can also be faced if proper integration and training are lacking (Reinders & Hubbard, 2013).

In addition to learner training, teacher training also needs consideration (Kılıçkaya & Seferoğlu, 2013; Levy, 2000; Son, 2014a). Studies reveal that many CALL teachers are either autonomous or social learners (Son, 2014a). Stockwell (2012: 3) advises that as there is a diverse range of technologies available, one needs to look at the individual context within which CALL will be used. Factors that need consideration are the learners, mode of instruction, learning goals, the institutional setting, the experience and policies adopted by the teacher (Johnson & Brine, 2012).

This chapter, therefore explores issues related to the inclusion of CALL second language learning, based on second language acquisition theories and CALL methodologies (Doughty & Long, 2003). The term ‘second language’ used in this study is defined as any language other than first language, home language or mother-tongue language. A definition of CALL is provided in Section 3.2. This is subsequently followed by an historical overview of CALL in Section 3.3. In Section 3.4, theories of second language learning that have informed CALL design and practice is briefly discussed. In this study, second language refers to any language learning other than first or mother tongue language. Some of the prominent SLA theories included for discussion include Krashen’s Input Hypothesis (1982), Long’s Interaction Account (1981), Vygotsky’s Sociocultural Theory (1978) and the Constructivism theory (Chapelle, 2005a, 2005b; Egbert, 2005; Huh & Hu, 2005; Levy & Stockwell, 2006a; Warschauer, 2005). In Section 3.5, various research perspectives in CALL design and practice

is explored. Particular reference is made to design-based research, a research methodology suitable for instructional environments that is further discussed in sub-section 3.5.4. Section 3.6 explores an investigation into the use of task-based language teaching in CALL environment. It further explores the rationale for adopting a task-based specific purpose CALL design in the teaching and learning of a second language. This section also includes the recent CMC, and technology-mediated TBLT methodology proposed by Gonzalez-Lloret and Ortega (2014). In addition, issues relating to input enhancement, FonF and the role of interaction in CALL form part of the discussion as well. In Section 3.7, the development of learner autonomy is discussed. This is followed by a discussion on the importance of both teacher and learner CALL training in Section 3.8. In Section 3.9, a description of how technology has been integrated into the teaching and learning of isiZulu for health sciences students at the University of KwaZulu-Natal (UKZN) is presented. The concluding section of this chapter in Section 3.10 follows thereafter.

3.2 Defining ‘CALL’

The abbreviation ‘CALL’ refers to “computer-assisted language learning”. An earlier definition by Levy (1997) states that CALL is the “search for and study of applications of the computer in language teaching and learning”. Levy & Hubbard (2005) refer to CALL as a both a ‘general label’ and a ‘global descriptor’, which concerns the development and use of technology applications in language teaching and learning. According to Egbert (2005: 4), “CALL” involves “learners learning language in any context with, through and around computer technologies”. Another broader definition of CALL by Hubbard (2009: 1) refers to any process where the learner utilizes a computer and subsequently, makes improvements in language learning. This process of language learning via the computer includes a range of technological uses such as CD-ROMS containing interactive multimedia and language exercises, electronic reference materials (e.g. online dictionaries and grammar checkers) as well as electronic communication via email, blogs and wikis (Chapelle, 2010: 66).

For the purposes of this study, the term CALL is used to refer to interactive multimedia, e.g. a text on computer, digital audio and video, database materials and electronic communication and the Internet, used in the second language class and beyond the confines of the classroom as part of the second language syllabus.

3.3 An historical overview of CALL in second language learning

CALL research dates back to the early 1940's (Fotos & Browne, 2004; Heift & Schulze, 2015; Warschauer & Healey, 1998). It has significantly evolved from the earlier 'structural' or 'behavioural' period, through the communicative phase to an integrative period (Hubbard, 1996; Thomas & Reinders, 2010; Warschauer & Healey, 1998). Much of CALL research and development during these periods are referred to as 'tutorial CALL' (Heift & Schulze, 2015: 471). According to Heift & Schulze (2015: 147), 'tutorial CALL' involves the interaction of learners with the computer, which uses a variety of language exercises such as multiple-choice questions, fill in the blanks, matching or translations. Multimedia options such as audio and video clips were also possible within tutorial CALL activities. However, one of the drawbacks with the tutorial CALL program was that, within a communicative context, learners were exposed to fewer language structures and were unprepared to learn during individual practice (Heift & Schulze, 2015). Its primary focus was on reinforcing written language practice skills learned within the classroom in order to improve language skills. However, Hubbard and Siskin (2004) in Collentine and Collentine (2015) argue that tutorial CALL programs can be informed by current information-processing theories if carefully designed. In other words, it can be viewed beyond the behaviourist approach or the 'drill and practice'

The first period was the behaviourist views of CALL, which consisted of mainly repetitive language, and practice drill exercises, where the computer was seen to act as a tutor (Warschauer & Healey, 1998). Much of behaviouristic CALL followed a similar pattern to the teaching procedures of structural linguistics and the audio-lingual method, which is a behaviourist model of language learning based on habit formation (Fotos & Browne, 2004: 4). One such framework that illustrates the behaviourist perspective is the tutor-tool framework proposed by Levy (1997). In this framework, Levy distinguishes the role of the computer as a tutor, where it replaces the teacher and as a tool, where it expands the students' abilities (Hubbard, 2009: 21). Levy (2009) argues that whilst the computer as a tutor evaluates the learner, computer as a tool does not. In other words, the computer tutor is pre-programmed to evaluate students' input when the teacher is not available whereas the computer tool is not predetermined. It is vital that both teachers and students work side-by-side to assist in the preparation for the work at the computer. Other advantages of the computer tutor include its flexibility – learners can complete their tasks at any time or at any place or pace that is convenient to them. By allowing learners flexibility in their own learning promotes learner autonomy. Discussions related to learner autonomy is further developed in Section 3.7. The computer tutor is also seen as providing valuable supplementary work for language practice and feedback, which should be 'accurate,

appropriate and timely' (Levy, 2009: 73). However, Levy (2009: 67) emphasises that the success of the computer tutor depends upon certain factors such as the ease of access to computers, the effectiveness of computer management, the language aspects that can be covered in this manner and the validity of direct language teaching. He further highlights that even though computer-mediated forms of communication are on the rise, priority should be allowed for face-to-face interactions in order for language learners to communicate effectively and efficiently (Levy, 2009: 73).

In addition to the opportunities provided by the computer tutor, the tool also has many strengths. Tools can include emailing and dictionaries. According to Levy (2009: 72), tools are designed to assist students to accomplish a task effectively and efficiently, who have direct control of these tools. To use a tool successfully, training is essential thus making the role of the teacher more demanding. For instance, the learning management system (LMS), Moodle, contains a quiz tool within its system. Students, as well as language teachers, need the required training to understand how the tool can be utilised effectively.

Despite emulating techniques from the behaviourist model of language learning, Fotos and Browne (2004: 5) note that several drill programs, similar to the tutor tool framework, still exist even today. These drill programs can assist with vocabulary learning and grammar practice as it has been emphasised that continual exposure to such activities could lead to enhancing acquisition. Moreover, the computer provides opportunities for learners to receive instant responses and presents activities at the learners' pace, which encourages learner autonomy (Fotos & Browne, 2004). Further discussions on enhancing learner autonomy are given in Section 3.7. In a study conducted by Collentine and Collentine (2015: 274), conceptual replication within a tutorial CALL environment was used to show how both input-oriented and output-oriented approaches to language instruction can enhance complex grammatical development. The study, which relates well with task-based language learning, indicated that promotion of complex grammatical features can be affected where practice is meaningful and if instructional design is informed by psycholinguistic processing principles and feedback is provided (Collentine & Collentine, 2015).

The second phase involved communicative CALL where digital-based activities placed more focus on using forms rather than on the forms themselves. More emphasis was placed on the communicative use of the language instead of the mastery of isolated forms (Fotos & Browne, 2004). Grammar was to be taught implicitly instead of explicitly, learners should be encouraged to generate authentic responses and the use of the target language should be predominant (Warschauer & Healey, 1998).

Much of communicative CALL related to the cognitive theories, which highlighted that the learning process involved “discovery, expression and development” (Warschauer & Healey, 1998: 80). These included text construction programs, games, puzzles, cloze tests and simulations. The main element of communicative CALL was focusing on what students did with each other whilst working at the computer instead of what students did with the computer. Although communicative CALL was seen as an improvement to the behaviouristic CALL, it had also been criticised for using the computer in an incoherent manner. According to Fotos & Browne (2004: 5), communicative CALL was restricted to drill practice exercises and lacked in providing learners important feedback. This led to a departure from the cognitive view of communicative teaching to a socio-cognitive perspective, placing emphasis on language use in a more authentic social context. The learning model of the computer as a tool proposed by Levy provided the opportunity for active learning as mentioned above.

The third period saw an insurgence of integrating learners in authentic environments (i.e. real-world target tasks) called integrative CALL. This new perspective sought to integrate various skills such as listening, speaking, reading and writing as well as to integrate technology even further into the language learning process (Warschauer & Healey, 1998: 80). According to Warschauer and Healey (1998: 99), modern technological and pedagogical advancements have made it possible to fully integrate computer technology into the language learning process. Multimedia programs can now engage learners into environments to practice their language through speech-recognition programs. In addition, the Internet offers a plethora of opportunities to communicate and engage in the target language through synchronous (real-time communication) and asynchronous (email, news bulletins and blogs) communication. The three phases identified by Warschauer and Healey (1998) clearly indicate that computer technology has proven its worth and is an essential part of language teaching and learning.

However, the historical landscape of CALL has been critiqued and reassessed (Bax, 2003). In his paper, Bax (2003: 120) comments on the inconsistencies in Warschauer and Healey’s historical overview. He further criticises the criteria used by Warschauer and Healey to explain the three distinct stages of CALL, i.e. the behaviourist, communicative and integrative CALL. Bax (2003: 124) points out that although Warschauer and Healey have provided a valuable analysis of conceptualising the development of CALL, their proposed formulation requires clarification and amendments. Hence, Bax has provided a new alternate analysis, where he refers to the three above-mentioned stages as Restricted, Open and Integrated CALL.

Bax (2003: 125) argues that the term ‘Restricted CALL is more comprehensive and flexible as it includes the theory of learning from ‘behaviourist CALL’ and the digital artefacts and activity types in use at the time, the role of the teacher and feedback to students. His second approach termed “Open CALL’ is open to all dimensions such as feedback to students, software types and the roles of teachers and learners, including the dimension in ‘Behaviourist CALL’. Lastly, ‘Integrated CALL’, which Bax claims is different from Warschauer and Healey’s “Integrative CALL”, refers to the end goal which teachers and learners should be working towards. Bax (2003: 132) introduces the concept of ‘normalisation’ whereby technology is “invisible, serving the needs of learners and integrated into every teachers’ everyday practice”.

According to Fotos & Browne (2004: 7), many researchers have agreed that there is a definite shift in the use of general technology and a shift in education away from the teacher-centred classroom to a learner-centred environment in which the students take charge of the subject matter and their learning process. In doing so, learners are required to be responsible for their own learning thereby enhancing learner autonomy. In addition, Fotos & Browne (2004), point out that the most effective uses of CALL are in favour of this new model of education and language teachers are encouraged to respond by creating CALL activities for their specific instructional space.

3.4 Theoretical foundations of CALL design and practice

Several second language-learning theories have had a significant influence on CALL research, design, methodology and practice. The theories that have contributed in shaping current beliefs and research on second language learning have also been the foundation for CALL research. This section briefly outlines the theories that have been used in CALL, i.e. the interactionist, sociocultural and constructivism theories.

One of the most influential theories from the original works of Krashen was the Input Hypothesis. It has been noted that this particular theory has made significant inroads into CALL research as it was with second language practice in general. In adopting the Input Hypothesis, CALL designers realised that the computer provided a valuable source of input. However, Long (1981) points out that input on its own was insufficient for learning a language. Both interaction and learner output were needed for successful language development. Consequently, Long’s Interaction Hypothesis was adapted to incorporate the role of attention and noticing, interactional modifications and focus on form (Levy & Stockwell, 2006a).

Regarding FonF, there has been much attention given to this aspect in the interactionist theory. Doughty & Williams (1998) argue that the development of language proficiency was not only dependant on meaningful input and interaction opportunities. Second language learners also required “pedagogical interventions” that will assist them in focusing their attention to grammatical structures or forms. In other words, according to Doughty & Williams (1998: 2) these “pedagogical interventions” should draw learners’ attention on the linguistic forms of the language but within a context of communicative, meaning-focused activities . A few options of how focus on form has been adopted within CALL research include on-screen assistance such as word definitions, translations of difficult words or new vocabulary or short grammar explanations and the addition of images to text.

According to Levy & Stockwell (2006a: 113), these advancements to Long’s Interaction Account have encouraged and sustained the tradition of the interactionist theory. Even today, the Interaction Account had been the most influential theories in second language acquisition and CALL research and theory as well. The Interaction Account is argued to be an “appropriate foundation” for CALL researchers as it provides them with “important questions, research methods and an exploratory framework for studying second language learning” (Levy & Stockwell, 2006a: 113).

Sociocultural Theory in CALL research is another theory to be considered. The origin of sociocultural theory lies in the work of Vygotsky who believes that interaction within a social setting with others enhances learning and not learning in isolation (Levy & Stockwell, 2006a). The term ‘Zone of Proximal Development (ZPD), introduced by Vygotsky, claims that “learners would benefit most from tasks that are just beyond their individual capabilities” (Levy & Stockwell, 2006a: 117). This well renowned theory of ZPD posits that learners will require the assistance of more knowledgeable and experienced individuals (i.e. teachers or other competent learners) in order to accomplish the task, if done alone. In applying this theory in CALL practice, much emphasis has been placed on learner interaction such as in cooperative learning and collaborative CALL. In other words, communication either with other learners using the computer or between the learner and the computer. Research has shown that the Vygotskian sociocultural theory has been and continues to permeate CALL theory, especially when CALL courseware supports interactional features (Levy & Stockwell, 2006a).

The final theory to be discussed in the section is the Constructivism Theory. According to Levy & Stockwell (2006a), this broad theory includes a broad range of perceptions about learning in general. The general view of the constructivist theory is that knowledge is created and active participation by

the learner is emphasised, along with the social nature of learning. The constructivism theory has varying interpretations on CALL research but the most significant is the emphasis placed on the active involvement of learners in the learning process. In other words, strong emphasis is placed on the learner to construct meaning through collaborative tasks using the computer to assist with the completion of tasks. Therefore, this feature stands out prominently in CALL programs.

In view of the above discussion, it is evident that various theoretical underpinnings of language acquisition, second language learning and general educational learning have influenced and have been passed over to CALL research and practice. The researcher acknowledges the positive influence and impact that the multiple theoretical perspectives have had on CALL research and practice. However, as a language teacher, the researcher opts for a more diverse approach. The researcher argues for a more pragmatic approach in terms of CALL teaching and practice. Essentially, several factors need to be taken into account when considering theoretical frameworks to assist in shaping CALL design and pedagogical decisions. These include amongst others, background of the context, institutional policies, goals of teachers and designers, learners' proficiency, communication, and technological needs. As a final point, the researcher believes that theory should be viewed as a guide and not as a prescriptive formula for CALL design and practise.

3.5 Research perspectives in CALL design and practice

It is well accepted that research in computer-assisted language learning provides language teachers the knowledge of how technology can be best used to develop the process of language learning. In an earlier discussion of this chapter, studies in current CALL practises showed various approaches to the inclusion of technology into the second language classroom. Research and practice conducted in CALL is very diverse in nature, drawing from varied theoretical perspectives. Despite this diversity in research perspectives, it seems that a “specific picture of what CALL is and does has not emerged” (Egbert, 2005: 3). Stockwell (2012a: 5) reiterates stating that “there are no overarching theories in CALL”. He adds that there is not a single theory that would explain the complexities found in the field of CALL, therefore a range of different theories are available to account for these complexities. This section looks at a review of some of the research conducted in CALL and will provide evidence that research is undertaken from multi-faceted theoretical perspectives.

In order to understand the diversity of CALL research, Egbert (2005) explains that numerous variables influence CALL environment. According to Egbert (2005: 4), these variables include context,

technologies and tasks. Context refers to the physical environment where actual learning takes place and does not have to be confined to the classroom only but may include the library, language laboratory or even home. The second variable is technologies. Egbert (2005) argues that CALL research looks beyond just the computer and includes any form of technological device or software that runs a program. These electronic devices could consist of peripherals such as cell phones (with text messaging), laptops, digital cameras, video recorders, scanners and printers and web searching facilities. Any device that can engage in various modes of communication, i.e. speaking, listening, reading and writing are included as technologies. Thirdly, Egbert (2005) proposes that in CALL environment, both learners and teachers are engaged in various kinds of tasks. She argues that content, structure and organization of such tasks can have a significant impact on the learner achievement. Further discussions regarding task-based CALL are evident in Section 3.6 below.

In addition to Egbert's definition of CALL research, Stockwell (2012a) also provides his interpretation of CALL research to include diversity in context, technology, learners and teachers. According to Stockwell (2012a: 2), every aspect in CALL research takes place within a context and it is this very context that will have a major impact on the technology chosen and how it is used. He states further that there is a diverse range of technologies available and that CALL practitioners need to look at the individual context within which it will be used. Referring to context, Stockwell (2012a: 3) argues that a combination of different elements need to be considered within the context. These elements include *inter alia*, the learners, the mode of instruction, the learning goals, the institutional environment, the experience and policies adopted by the teacher. Moreover, Stockwell (2012a: 3) points out that learners seem to be the most diverse and ever-changing element. They are seen as the end users of the CALL tasks and activities and CALL teachers should always consider who their students are and what they want to achieve.

As was discussed in the previous paragraph, CALL research is varied and is dependent on the different aspects in CALL environment as identified above. Egbert (2005: 5) describes research in CALL as “studies that take an analytic approach by looking at one or more variables in any number of ways or studies that look at the system of which of these variables are part, at their interactions and complexities and their effects on one another”. According to Egbert (2005), conducting research in CALL is crucial. Much research studies, both past and present, provide guidelines for good CALL practice. However, with so many suggestions, mostly anecdotal in nature, CALL needs to build a solid common base so that both researchers and practitioners can build upon their knowledge of how the effects of incorporating technology into the learning environment may best be used to facilitate the language

learning process. Stockwell (2012a: 1) argues further that such a range of variation and diversity in technologies available to CALL practitioners can seem overwhelming but being aware of issues involved in CALL, can assist in managing the diversity.

Levy and Stockwell (2006a: 135) suggest that when applying theory to research in CALL, it can provide “a context and a view of language and language learning”. Theory and practice has also been viewed as a two-way flow relationship as Egbert (2005: 5) claims that, practice “informs theory, but theory should also inform practice so that not so much of our teaching is based on trials and errors. Egbert (2005: 6) claims further that although investigations into the effectiveness of using CALL tools are useful and interesting, they do not provide the answers to understanding CALL in its entirety. Hence, she points out that a deeper understanding of CALL is required and a more detailed view on how the processes involved in CALL occur as well as studying the purpose of the variables mentioned in the previous paragraphs. Important questions that need consideration in CALL research include what are language learners learning, at what rate and pace are they learning, how much learning takes place and what is the learning based on and what causes learning in a CALL learning environment (Egbert, 2005: 6). Finally, Egbert proposes that it is important to consider the different perspectives of CALL as it can relate to a theory or an approach to research, which can eventually determine the outcome of the research and influence the method implemented. An overview of the main CALL research perspectives are subsequently discussed below.

3.5.1 Interactionist second language acquisition theory

The value of the theory of interactionist second language acquisition cannot be over-emphasised. It is one of the most useful and influential approaches to second language teaching research, which has contributed significantly to the field of CALL. As Chapelle (2005b: 56) points out, evidence of a wide range of second language acquisition perspectives can be found in CALL research but the “most predominant” of them all stems from an interactionist perspective (cf. Interactional complexity). The interactionist theory also has established strong links evident in interactional complexity proposed in Robinson’s Cognition Hypothesis (2005) assumed from Pica et al. (1993) task typology. Discussions on interactional complexity and its influences on task conditions of task-based CALL activities were provided in Section 2.3.5.2 of Chapter 2.

The interactionist perspective in research has drawn on many suggestions for pedagogy that have been developed over several years for CALL investigation. Interactionist-based CALL research can also

test these suggestions within the CALL environment. Studies have been conducted to investigate whether the benefits hypothesized by the interaction hypothesis of three types of interaction (i.e. negotiation of meaning, providing enhanced input and affording opportunities to direct attention to linguistic form in input) can also be evident when using the interactionist approach during CALL tasks in the CALL environment (Chapelle, 2005b). The types of interaction indicated above also feature in the task typology framework proposed by Pica et al. (1993). According to Chapelle (2005b: 61), the interactionist perspective of second language theory has afforded CALL research a solid grounding base. It has also provided useful concepts and approaches that have emerged from it, thus contributing to the overall benefits of the interactionist analysis in CALL. Moreover, interaction-based research can guide in improving the design of technology-mediated learning and teaching environments by showing precisely what learners do when interacting with computers (Caws & Hamel, 2016: 2).

Even though the interactionist theory highlights many advantages when applying the approach to CALL research, Chapelle (2005b: 61) outlines some disadvantages as well. One of the disadvantages is that traditional interactionist theory is based on face-to-face interaction and within the CALL environment; different methods using other types of interaction may need to be considered. Another limitation of the traditional classroom-based interactionist theory is that constructs are not easily transferable when used to present the different kinds of learning situations in and out the context of the classroom, particularly when using CALL (Chapelle, 2005b). A further limitation of using the interactionist theory to CALL research, points to the acquisition of vocabulary and syntax. The interactionist theory has placed strong emphasis on investigating the acquisition of vocabulary and syntax but limited focused on how pragmatics are acquired. Chapelle (2005b) states that the acquisition of pragmatics is of great importance to CALL and argues that when conducting CALL research from an interactionist perspective, it should also investigate the acquisition of pragmatic aspects of language acquisition in CALL. The lack of research on pragmatics in interactionist research in ISLA has also been documented (Loewen & Sato, 2018). However, issues regarding pragmatics can be included in materials design procedures and in the application of real world target tasks.

3.5.2 Sociocultural theory and CALL

The sociocultural perspectives on CALL, originating from Vygotsky's work, focuses on three main aspects, namely, the role of tools (i.e. the computer); social learning (i.e. interaction between learners and between learners and tools) and the development process learners undergo or are exposed to when

learning a language. Thus, this implies that CALL research based on the sociocultural theory will need to focus more or less on each of the following three aspects of the Vygotskian theory.

Regarding the first aspect, understanding CALL from a sociocultural perspective involves an investigation into the role of the digital tool in language learning and specifically how introducing new technological tools can transform the language learning pattern and learners' language usage. In the second instance, concerning social issues, CALL research done from a sociocultural perspective will consider the impact of social factors on research activity when incorporating computers in second language learning. According to Warschauer (2005: 42-43), the social learning concept is essential for research in computer-mediated communication (CMC), related to how learners incorporate others' linguistic portions in their own communication and how learners adjust their writing whilst communicating with others through the use of the computer.

A third aspect involves the developmental process of CALL research undertaken from a sociocultural viewpoint. This suggests that focus should be placed on the wider context in which CALL is used. Warschauer (2005: 43) points out that it is essential to take into consideration the "broader historical, social and cultural contexts" in order to have a better understanding of CALL from a sociocultural standpoint. Being cognisant of the broader context in which learners work with, will provide an understanding into how the use of new technologies will affect the language teaching and learning processes. In the context of teaching second language isiZulu for doctor-patient communication, it is essential to consider social and cultural aspects within the design of task-based CALL material.

Researchers who support a sociocultural perspective to CALL research argue that it is imperative to understand how learners develop in a sociocultural manner. This understanding will in turn generate awareness into how learners will respond to the inclusion of technology into the language-learning context. Warschauer (2005: 48) emphasises that the technology is a tool that "mediates and transforms human activity". He further elaborates on the view that adopting a sociocultural approach to CALL research contributes to the understanding of how this transformation occurs within a broader social, cultural and historical setting. In terms of teaching and learning second language isiZulu for doctor-patient communication, a study by conducted Singh and Gokool (2018) highlighted students' perceptions on the implementation of a quiz tool as part of assessments. Introducing the quiz tool as a new technological assessment tool to students did alter second language learning patterns and learners' language usage of isiZulu. The quiz tool available on Moodle is used for both formative and summative assessments.

3.5.3 *Situated learning*

Situated learning is a learning theory that comes from the Vygotsky's social learning theory and social development theory which provides an understanding of learning and human activity from a sociocultural perspective (Yang, 2005). The core element of situated learning theory is that knowledge is co-constructed in the mind and by interacting with the world, it is seen beyond just an internally, cognitive process.

According to Yang (2005: 156), the key elements (i.e. social world, activity and person) are essential parts of the learning content in situated learning theory. Based on the situated learning theory, an understanding of how learning occurs, each element involved in the learning situation has to be carefully studied and understood. The term 'social world' identifies the social, historical and cultural context in which learning happens. 'Person' refers to the learners and other individuals whom the learners may interact. The 'learning context' involves the growth and transformation of the learner's knowledge and skills and lastly 'activity' which refers to the learner's participation in community of practice (Yang, 2005).

Participation by learners is referred to peripheral participation, according to Yang (2005). It is a process whereby a new comer to a particular community of practice participates peripherally at the start and then gradually transforms into a full participant of the community of practice. Yang (2005) points out that learning occurs through the interrelationships among the following elements (i.e. teachers, learners, values and beliefs) and the interactions among members of the community of practice. This participation correlates with Robinson's SSARC model (2010), which claims that introducing learners to simple tasks at the initial stage and then gradually to more complex tasks will also gradually increase learners' cognitive complexity and accuracy.

Yang (2005) supports the use of the situated learning theory as an approach for CALL research. He points out it is important to consider the sociocultural context of a CALL environment as the situated learning theory is closely linked to the former. Yang (2005: 154) argues for an expansion into the social, historical and cultural perspectives of the learners as it will provide useful insight into how these factors interact to influence the teaching and learning occurring the CALL environment. In addition, Yang (2005) argues that exploring learning that takes place through peripheral participation on a community of practice, will provide valuable insights into the power relationships between participants in a CALL environment and how these impact on learning. Similarly, this theory can be

applied to the context of teaching and learning of isiZulu as a second language. By application of this theory, the social world can refer to the healthcare context, the person refers to the doctor-patient interactions and the activity refers to health sciences students who participate within a healthcare community of practise. These key elements can be incorporated into the task designs of the doctor-patient communication.

3.5.4 Design-based research

Traditionally, educational research was conducted by methods or techniques developed in other disciplines. Despite these existing methods and techniques, they were not effective enough for conducting research in an educational context. An effective alternative for educational research was proposed by some educational researchers which was termed design-based research (Yutdhana, 2005). The basis for developing the design-based research was to conduct research that placed more emphasis on practice. Yutdhana (2005) points out that the design-based research can be seen as both a research methodology as well as a general research perspective.

Yutdhana (2005: 170) describes design-based research as an enquiry into “how, when and why educational innovations work in practice”. The two key components of design-based research are designing learning environments and developing theories of learning, according to Yutdhana (2005). In order to meet these elements, design-based research permits continuous cycles of design, implementation, evaluative feedback and redesign. These elements are well connected to task-based language learning and teaching, in that the design of real world target tasks are also part of designing a learning environment. Moreover, a similar cyclical process of design, implement, analyse and redesign can also be applied to task-based teaching (Willis & Willis, 2008). Another important characteristic of design-based research is that participants are acknowledged for their roles as designers, learners and teachers and are referred to as co-participants in the design and analysis process (Yutdhana, 2005). Yutdhana (2005) points out further that an additional feature of design-based research is that it is not concerned with simply conducting test hypotheses to prove a theory but rather it focuses on real learning situations with the aim of understanding how these situations work and why they are effective or not. The focus on real learning situations correlate with the target or real-word tasks in task-based language learning and teaching.

According to Yutdhana, the design-based research model is considered an effective research methodology for conducting CALL research. The main reason this perspective is ideally suited for

CALL research is that both CALL and design-based research stress particularly on the real learning environments that are constantly changing. Likewise, with design-based research, CALL too follows a pattern of design, implementation, analysis, redesign that is followed by the re-implementation of the new CALL environment. In addition, Yutdhana (2005) points out that design-based research can be used to analyse human interaction through the adoption of technology. Yutdhana (2005) states further that a design-based research perspective can be an effective option in CALL since emphasis is placed on examining the context in which the design will be used. A similar connection of design-based research can be established with task-based language learning and teaching. Yutdhana (2005) points out that design-based research conducted in CALL environment examines both the technology (i.e. the actual courseware) and the learning environments. In other words, emphasis on the research design is not placed on the end products or the designed artefacts only but also on the learning process. The rich descriptions derived from the design and implementation processes together with an understanding of the context in which the research and implementation are conducted, are equally important. Similarly, Huh and Hu (2005) maintain that CALL research should not only focus on the effectiveness of including technology in the second language context but emphasis should be placed on both the advantages and limitations of using technology, a valid design and a strong grounding in theory and research.

This section provided a brief overview of some key perspectives regarding the manner in which CALL research could be conducted. Various different options of research approaches are available that will eventually lead to ongoing research discussions and debates. As a result, different research questions and interpretations of findings will be generated from these considerations. Therefore, it is imperative to examine thoroughly the different perspectives before making a final decision to implement CALL within the teaching and learning environment.

Taking into consideration the connections identified between task-based language learning and teaching and design-based research, this study has been informed by the design-based research perspective for the development of a procedure for the development of a CALL syllabus design for a health sciences specific course. This framework is further developed in Chapter 5 of this study.

3.6 Task-based language teaching and learning in CALL

As noted in the previous chapter, focus was placed on investigating key issues related to task-based language teaching. In this section, factors relating to the use of tasks in a CALL environment are

explored. This section provides a description of two different frameworks for technology-based task-based language teaching, i.e. Chapelle's (2003) framework for technology-based tasks and a recent framework on technology-mediated TBLT by González-Lloret and Ortega (2014). These frameworks are described in the following sections below.

3.6.1 Chapelle's technology-based TBLT methodology

Chapter 2 provided a detailed discussion on how different frameworks proposed by prominent researchers like Pica et al. (1993) and Skehan (1996), were used for the classification of language tasks and how task classifications were implemented into task-based language teaching. In this section of Chapter 3, a discussion on some key elements of task-based language teaching and learning, specifically the inclusion of technology-mediated tasks in a CALL environment, is provided below. The table below (adapted from Chapelle (2003) provides an outline of a range of task features drawing from the works of Pica et al. (1993) and Skehan (1996) of which have been discussed previously in the last chapter. However, the table also includes additional features that relate to technology-mediated tasks as proposed by Chapelle (2003). Henceforth, only a discussion on the views by Chapelle is presented and not those by Pica et al. (1993) and Skehan (1996).

According to Chapelle (2003), several issues should be addressed when designing technology-based tasks, for instance, what is to be achieved from this task, who are the key participants involved in the task, how will this be achieved and what are the outcomes of the task. These vital questions are featured in Chapelle's framework in the table below and can assist CALL designers to construct appropriate material suitable for the learners to use. Chapelle (2003) describes five features that define the task aspect relating to **topics and actions** i.e. goal of the task, topics of the task, processes involved in the development of topics, cognitive complexity of the task (cf. Robinson's Cognition Hypothesis) and the processes related to the performance of the task and lastly the location of participants during task performance. Chapelle (2003) points out that in order to analyse the topics and the actions in second language tasks from a CALL research and practice viewpoint, four additional features should be considered. As indicated in the table below, these include **task topics**. Chapelle (2003) points out that there should be a range of task topics that are both interesting and topical to learners. The **processes** required for task performance are also essential from a CALL perspective. Chapelle (2003: 140) indicates that the various types of interaction, (i.e. between learners in asynchronous communication and between learners and the computer, as well as between learners and other language users in synchronous communication) and the level of control participants may have for searching and

gathering of information are important considerations in CALL tasks. A third addition, informing topics and actions, refers to how **cognitively complex** the topics are, and the processes required for task performance. This feature connects closely to complexity issues raised by Robinson Cognition Hypothesis (2005). Chapelle (2003: 141) states that the task process could be described as a genre, for instance listening and noting points from a lecture or making a reservation. The use of technology in certain genres such as providing written text support through the Internet could affect the performance of an oral chat communicative task. The **location** of the task is the last factor that can also be influenced the by the inclusion of technology in the task. The physical location of the task could be in class, via face-to-face communication while using the Internet to gather necessary information for task performance or it could be in a lab or at home. These factors need to be considered by CALL designers to ensure the required facilities are available to learners and whether or not the task will be suitable for the learning environment.

Table 3-0-1. Task framework accounting for factors in Pica et al. and Skehan's frameworks in addition to those suggested by research on technology-based tasks. Adapted from Chapelle (2003).

Task Aspect	Task Feature	From Pica et al.	From Skehan	From technology research
Topics and actions	What is the task goal?	Communication goal: goal orientation and outcome option		
	What are topics?			Range, interestingness, and currency of topics
	What processes are used to develop the topics?	Interactional activity: interaction requirement	Communicative stress: control	+ Types of interaction; level of control in searching and gathering information
	How cognitively complex are the topics and processes?		Cognitive complexity: cognitive familiarity and processing	Familiarity with genre processes
	Where does the task take place?			Physical location of communication
Participants	Who are the participants?	Learners		+ Teachers, other language users, computers
	What are their interests with respect to language learning?			Reasons for studying the target language
	What is their experience in using technology?			Knowledge of computer use, including typing
	How many participants are engaged?		Communication stress: scale (number of participants)	+ Potential audience not immediate participating
	What is the relationship among the participants?	Relationships relative to information: Interactant roles, interact relationship		+ Relationship relative to cultural background, interests and authority of others
Mode	What are the modes of language use?		Communication stress: reading/writing/ speaking/listening	+ Non-linguistic moves

	How quickly must the language be processed?		Communication stress: scale (length of texts) Communication stress: time pressure for task	+ Time pressure for moves during interaction
Evaluation	How important is it to complete the task and do it correctly? How will the learners' participation be evaluated?		Communication stress: stakes	

The next task aspect indicated on Table 3-1 refers to the participants in the task. In terms of the traditional CALL research perspectives of tasks, participants are assumed to be the learners only. However, according to Chapelle (2003), research on technology-mediated tasks considers the teacher, the computer and other learners as other possible types of participants. Other essential aspects related to the learners such as the learners' reasons for learning the target language and their knowledge about computer usage; including typing skills require consideration too. Moreover, Chapelle (2003: 141) points out that the task designer should also include other potential participants within the task and not only focus on those immediately participating in the task. This is important because the participants' production such as a chat or discussion performed between two or multiple learners could possibly be recycled for a lesson or another group of learners. Chapelle (2003) suggests that the knowledge on potential participants in a task should be considered as a task feature as this can influence later task designs. The relationship among the participants is also considered as a task feature. Chapelle (2003: 141) expands the task feature regarding knowledge on who holds what information as proposed by Pica et al. (1993) by including the relationship relative to cultural background, interests and the status of each participant relative to each other. Relationship relating to learners' interests in performing a task or their goals during task performance as well as relationships relating to their expectations about each other's role in the task will have an impact on the relationship amongst learners and hence seen as an important task feature.

The third aspect of the mode of task as illustrated in the table above refers to the language of a task. The mode of the task normally assumes oral face-to-face communication relating to the interactionist perspective and language skills such as reading, speaking, listening and writing associated with cognitive features. According to Chapelle (2003: 142), the language of technology-mediated tasks should include non-linguistic moves as a task feature. These could include common ways of communicating through the computer such as pressing ENTER or using a stylus or touchscreen or

even the mouse to navigate and choose an option. In addition, Chapelle (2003) suggests including time pressure as a possible task feature to monitor how quickly learners move during task performance.

The task evaluation feature proposed by Chapelle is the fourth aspect. Chapelle (2003) does not explicitly state any task feature that relates to the evaluation process. She does emphasise however, that the evaluation feature is equally important in the CALL environment. Chapelle (2003: 142) indicates that learners using the computer during task performance will be aware of their performance during subsequent evaluation and are more likely to draw their attention to language quality.

The above discussion on Chapelle's framework clearly indicate how technology-based tasks have contributed significantly to the overall task-based theory. The supplementary task features evident in the framework provides the task designer an array of options that need to be considered during language task development. Chapelle's extended framework also assists in providing possibilities of task features that can be implemented during the design of tasks used in a CALL environment.

In the context of teaching L2 isiZulu for doctor-patient communication, the pedagogical tasks described in Chapter 5 are based on several considerations proposed by Chapelle. The tasks include current and interesting topics and actions that are relevant to the health sciences students who will be entering in the real world of healthcare. Topics include the most common illnesses such as instructing patients on coughing etiquette or advising patients on medication usage are everyday tasks that students encounter during the clinical years of study whilst on hospital rotations at various local hospitals. Keeping in mind the proficiency levels of the students and their individual differences such as age, the cognitive complexity of the tasks are considered in the design of such tasks. Moreover, while some tasks have been designed for interaction between learners and computers; others provide opportunities for interaction between learners and their classmates, which can be performed at computer LAN available at the institution or at any location where access to the Internet is available. Tasks can even be performed using smartphones or other digital tools. Possible types of interactional activity for doctor-patient communication could be through simulating the interaction between the two participants or recording the doctor-patient conversation that allows one participant to respond to the recorded voice, in the role of the doctor. In this way, the student can interact with the computer to listen to the recorded voice and respond by recording their own voice and later listening to their recorded responses. As mentioned, the participants are young medical doctors in training who acknowledge the relevance of learning isiZulu and who are motivated to learn the isiZulu language and culture despite it being a compulsory module. As Moodle is the official software-learning tool at

UKZN, students demonstrate high levels of knowledge in the use of technology. However, it cannot be assumed that all students prefer the inclusion of technology as indicated in a study conducted by Singh and Gokool (2018). It was found that students had mixed reactions regarding the implementation of the quiz tool as formative and summative e-assessments.

As discussed earlier, it has been well-acknowledged that TBLT is considered as an appropriate framework that assists in organizing technological designs for language learning tasks, as seen with Chappelle's framework above. Research by Doughty & Long (2003); González-Lloret (2003) and Skehan (2003) have also highlighted the importance of including technology into task-based designs. According to González-Lloret and Ortega (2014: 4), several studies have indicated various ways to enhance TBLT syllabi with the incorporation on technology. Though there are studies and research being conducted on the synergy between TBLT and CALL, González-Lloret and Ortega (2014: 4) point out that there remains a question unanswered, i.e. "how to integrate new technologies and language tasks into an organic and mutually informative whole". Hence, González-Lloret and Ortega (2014) proposed a recent framework which outlines a new understanding of the intergration of the principles of TBLT with language education and digital technology called "technology-mediated TBLT". A discussion on the recent framework of technology-mediated TBLT follows immediately below.

3.6.2 González-Lloret and Ortega's technology-mediated TBLT

Having provided a detailed overview on the principles of task-based language teaching in Chapter 2, this section focuses particular attention to a new framework towards technology-mediated task-based language teaching proposed by González-Lloret and Ortega. According to González-Lloret (2016) the well-known term CALL has naturally evolved to 'technology-mediated second language teaching' which includes technology beyond computers.

González-Lloret and Ortega (2014) argue that the inclusion of new technology (i.e. recent digital technologies such as tablets, smartphones and the like) in language learning and teaching does not serve the purpose of simply entertaining students but rather focus should be on their design, use and evaluation that are based on principled educational and language development goals. Moreover, these researchers point out that research suggests that new technologies have the capabilities of engaging students in active learning as well as "holistic tasks" which are suitable for incorporating in task-based language teaching as a well-theorized approach to language education (González-Lloret & Ortega,

2014: 3). They further emphasise that piecemeal inclusions of technologies are useful, but “restrictively translate face to face and paper and pencil tasks into text-based online environments” (Ortega & González-Lloret, 2015: 62).

In this recently proposed framework, González-Lloret and Ortega (2014) illustrate the potential synergy shared between TBLT and CALL which are based on **three** key requirements for consideration in technology-mediated TBLT. The **first** requirement concerns working with multiple definitions of tasks and redefining tasks within the context of technology and task integration. This is important for new technologies to be selected that link with real authentic ‘tasks’, instead of selected as basic drill exercises and language activities. This requirement is reminiscent of the real-world target tasks in TBLT. González-Lloret and Ortega (2014) argued that in order to have an optimal balance between technology and tasks, **five** main features are essential. These relate to the definition of a task. Within the context of technology and task integration, the **first** characteristic is that a task’s primary focus should be based on meaning (cf. definition of communication tasks). Although language tasks are preplanned, part of the learning arising from the tasks must be incidental and unknown to the learners. **Second**, tasks should be goal-orientated. This entails that the task plan should include a communicative purpose and a resulting outcome from completing the specific task. The **third** characteristic relates to students’ needs i.e. a needs analysis should be carried out as well as adopting a learner-centred approach to online tasks. This approach allows for flexibility, diversity and options usually related with online behaviours. With learner-centredness, learners are able to utilize their own linguistic and non-linguistic resources, along with their digital skills (González-Lloret & Ortega, 2014: 6). With the **fourth** feature, tasks should be holistic, in other words, tasks should be linked to the events in the ‘real world’ and lastly tasks should involve opportunities for reflective higher-order learning. González-Lloret and Ortega (2014: 6) maintain that these features relating to the definition of tasks can be used as reference points when developing, monitoring, adjusting and analyzing technology-mediated task designs. In addition, these features provide a useful guideline for selecting technologies that would link digital design to task design for language learning (González-Lloret & Ortega, 2014: 6).

According to González-Lloret and Ortega (2014: 6), the **second** requirement relates to being aware of the effects the inclusion of new technology has on the educational designs for the creation of knowledge and language learning. González-Lloret and Ortega (2014: 6) argue that individuals are faced with a plethora of technological experiences in their everyday lives. This in turn has created a multitude of new genres of holistic activities, bringing about a set of new learning needs. González-

Lloret and Ortega (2014: 7) further suggests that as technological design facilitates tasks, technology not only acts as a ‘vehicle of instruction’ but also leads to a set of new demands and actions which eventually become target tasks thus forming part of a curriculum.

The **third** requirement concerns how both tasks and technologies can be embedded in curricular contexts. González-Lloret and Ortega (2014: 7) argue that in the field of TBLT, tasks are viewed as serving an overall educational purpose. They are central in organising units which form the basis for needs analysis, task selection and sequencing, materials and instruction development, teaching, assessment and evaluation. Likewise, technologies should become completely integrated into the programmatic cycle which forms a TBLT syllabus. González-Lloret and Ortega (2014: 7) emphasise that the integration of both technology and tasks should be fully expressed within a specific programmatic context, especially in an attempt “to blend the two in mutual integral ways that are optimal for language learning”. In other words, a similar needs analysis conducted for tasks will have to be considered for the use of technology as well. Whereas the needs analysis of tasks will consider the language skills required to complete the task, the needs analysis for the use of technology will take into consideration several other factors such as the affordances of technological tools essential for task performance as well as the learners’ digital literacies, access to technology and the technological support in order to complete the task. The complexity and learners’ familiarity to both tasks and technology also need to be considered.

In addition to the learners’ needs, the language teachers too need to be prepared for introducing technology into their language classrooms. González-Lloret and Ortega (2014: 8) maintain that teachers’ needs are to be considered as well, in terms of their ease with and attitudes towards the same technology that the learners are being introduced to. The language teachers’ digital literacies, their readiness and enthusiasm to introduce technology into their teaching are some important factors that must be taken into consideration as these place a significant influence on the extent to which technology-mediated TBLT will be worthwhile as an innovation (González-Lloret & Ortega, 2014: 8). Further discussion on learner and teacher training in CALL is provided in Section 3.7.

González-Lloret and Ortega (2014: 8) propose that pedagogic tasks should be developed in a way that it maximises the full potential of a selected technology to do what cannot be achieved in a classroom context with pen and paper. They suggest that this can be achieved in two ways. Firstly, through the integration of multimedia consisting of rich and authentic input such as video, simulations and gaming environments and secondly engaging students in learning by doing that allow them to use the language

and the technology in dynamic and creative ways. Developing pedagogic task to its maximum potential could be influenced by learners' individual differences but could also promote learner autonomy.

The best example of technology using simulation (cf. simulated dialogues of doctor-patient communication tasks) and that which closely corresponds to TBLT principles of learning by doing is evident in the work by González-Lloret (2003). In an earlier task-based CALL design called “En Busca de Esmeraldas”, the researcher set out to develop a CALL activity based on the principles of language teaching proposed by Doughty & Long (2003) and on the hypotheses for developing multimedia by Chapelle (1998). This task-based CALL activity was designed using a sequence of tasks working to achieve a meaningful outcome and to enhance learning by doing. In addition to providing rich authentic input; giving feedback and promoting cooperative learning, this 3-D simulation activity generated L2 interaction and negotiation amongst the students, all of which suggests to lead to language acquisition. Integrating rich and authentic input such as videos, simulations and digital games are a few examples that are able to create a space for learners themselves to interact with language and technology in a creative way in order to complete a task (Lai, Ni & Zhao; 2013; Scholz & Schulze, 2017; Seedhouse et al, 2014). In a similar manner, the simulated dialogues presented in Chapter 4 of this study can also be designed as a CALL activity.

Regarding the design of assessments González-Lloret and Ortega (2014: 8) maintain that within a TBLT syllabus that fully embraces technology and tasks, the rational approach to evaluate students would be via technology-mediated performance-based assessment. These types of assessments should be developed, validated and evaluated bearing in mind that such assessment will be designed around the technologies used. As stated above, González-Lloret and Ortega (2014) proposed the term ‘technology-mediated TBLT’ to refer to a mutual understanding of the relationship between tasks and technology. They have used this term to integrate the best and common combinations of technology and tasks which can be used to organize TBLT or experiential “learning by doing” language education programs (González-Lloret & Ortega, 2014: 18). Issues concerning task-based assessments were discussed in section 2.7 of Chapter 2.

3.6.2.1 Needs analysis in technology-mediated TBLT

It is widely acknowledged that needs analysis is essential for the development of a second language curriculum (González-Lloret, 2014; Long, 2005b; Park & Slater, 2014). As discussed earlier, in Chapter 2, Section 2.8.2, needs analysis in a TBLT syllabus uses ‘tasks’ as a unit for analysis and

syllabus design (Long, 2005a & 2015). According to Long (2005a: 22-23) task-based needs analysis provided an alternative to conventional linguistically based analyses, by pointing out two advantages. Firstly, a task-based needs analysis uses dynamic qualities of the target discourse by identifying the target language in real-world contexts as opposed to linguistically based needs analysis that provide a list of decontextualized structural items. Secondly, the outcomes of a task-based needs analysis can readily be utilized as input for a task-based syllabus design. The procedure followed for conducting a needs analysis for this study, is linked to the proposals suggested by Long (2015) and González-Lloret (2014). During this needs analysis procedure, students were interviewed to identify specific target language required for real-world contexts and technological resources needed.

In technology-mediated TBLT as well, a needs analysis can be exploited, not only to address the language requirements needed to complete the tasks but also the “informational and multimodal digital skills” required to effectively engage with the technology should be considered. Park & Slater (2014: 96) cite Chapelle (2001) by stating that “technology-mediated tasks should be identified and developed to fit closely to learner needs and to focus on both meaning and form”. Moreover, needs analysis assists in eliciting information about what innovations and technological tools are most appropriate for the syllabus and inform language teachers about the necessary training for both students and teachers to be able to use them effectively and successfully (González-Lloret, 2014: 24). In the case of the current study, institutional needs regarding the inclusion of technology was considered. At the University of KwaZulu-Natal, the technological tool available is the open source software Moodle and the institution has undertaken the training of both staff and students.

According to González-Lloret (2014: 32) previous CALL needs analyses focussed on the technological infrastructure and context of the participants, learners’ technological needs and their need for training in information and communications technology (ICT). To date few studies of needs analyses exist that focus on technology-mediated TBLT. As described above, the network-based activity ‘En Busca de Esmeraldas’ by González-Lloret (2003) highlighted a need analysis as the initial step used to design a task-based activity to teach giving and following directions in Spanish. The point here is that the needs analysis did not contain questions about technology but rather “the technology-mediated task-based activity was a product of the found needs” (González-Lloret, 2014: 33).

González-Lloret (2014: 37) emphasises that a needs analysis of technology-mediated tasks should not only gather information on tasks but should also consider other vital aspects such as the technological tools used in the task; the participants’ skills and digital literacies as well as their accessibility, resources

and support. Chapelle (2014: 331) supports this view by stating that in order to conduct a comprehensive needs analysis to consider the future technology-mediated literacy needs of students, various other appropriate sources of information should be taken into consideration which surpasses the students themselves.

The first aspect on **tasks** concerns tasks as building blocks of a TBLT syllabus and the unit of analysis in needs analysis for TBLT (González-Lloret, 2014: 37). According to González-Lloret (2014: 37), the probing into learners' language needs informs a syllabus designer with what linguistic items to focus on as well as what interactive practises and in what particular context. With a burgeoning world of technology, it is imperative to find out what the learner needs to do with the language and through what medium this needs to be done and what effect this would have on each other and how. In some instances, syllabus designers, drawing from the information given in a needs analysis, may find that language tasks need not be mediated by any technology.

Secondly, the use of technological **tools** are utilized to complete many tasks in our everyday digital world. But not all tools are the same. González-Lloret (2014: 38) emphasises that a needs analysis should probe into the most effective digital tool for the successful completion of tasks, taking into consideration the target population involved, their digital literacies, contexts and purpose. This vital point should be considered as the selected tool has a significant impact on what language skills are required for task completion (González-Lloret, 2014). In the context of teaching isiZulu as a second language at UKZN, Moodle is the open source available to both students and academics.

An example illustrated by González-Lloret (2014: 38) provides a clear understanding of the above principle. The real-world task of making a hotel booking can be completed either telephonically or through the use of technology. Hence the technologies used in making a hotel booking online or on the phone are relatively different. Moreover, the language skills are also changed by the technology. Whereas reading and writing skills would be required for the use of the computer, listening and speaking skills are essential with a phone. Clearly, these differences would influence the real-world task in itself as well as affect the nature of the pedagogic tasks that will inform the TBLT syllabus.

González-Lloret (2014: 38) maintains that it is essential to consider that the need for some technological tools may emerge from the task itself. However, with an array of technologies having the capability to achieve the same task, certain factors need to be considered. These include the target

population engaging in the task; the difficulty level of some of these technologies; the accessibility that the participants may have towards the tools and most importantly their digital literacies.

The third aspect of **digital literacies** is another essential aspect that should be considered along with the technological tools needed. In other words, finding out what digital skills are needed by the learners cannot be ignored. Just as a need analysis makes inquiry into language skills required to complete a task, likewise finding out about the necessary digital skills needed to perform a technology-mediated task and what digital skills the students may already have, should be taken into consideration in a technology-mediated TBLT syllabus. Although many learners globally, are referred to as ‘digital natives’ or Net Generation, that is they are computer and multimedia literate and may have experience with certain forms of computer-mediated communication, a syllabus designer cannot assume that the learner population is equal. In other words, these digital skills could vary across different contexts and they may have a lack of familiarity with different available digital tools (González-Lloret, 2014: 40). According to González-Lloret (2014: 40), there are several methods and sources used to assess learners’ digital skills needs. Learners themselves are the most commonly used source as they can share their digital experiences or express their wants as well as give their opinions on technology. However, they may not be aware of what technological skills will be needed to perform a particular task. Regarding methods, questionnaires are the most widely used tool when conducting a needs analysis on CALL. These questionnaires may be used to enquire about the level of digital literacy of the learners. Other methods could include self-assessments; observation of learners performing a task or even screen capture recordings or computer logs. Identifying learners’ feelings as an alternate aspect in a needs analysis for technology-mediated task-based designs can be considered as a method too (González-Lloret, 2014: 40).

The final aspect of **access to technology** should also be included in a needs analysis of technology mediated TBLT, as pointed out by González-Lloret (2014). It is essential for a needs analysis to determine the access that students have to technology, taking into consideration their context such as urban area versus rural area; access location such as school or home; physical resources such as connection types and hardware and the type of technological support available to them. According to González-Lloret (2014: 41), access may not be directly related to the language tasks at hand but it is important for successful task completion. In order to complete a task successfully, technical support not only for the participants need to be considered but more especially for teachers involved in the teaching. Access to fast speed Internet is another aspect to be kept in mind for the development of technologically sophisticated pedagogic tasks. If support is unreliable, frustration and lack of

confidence in the technological tools for both educators and learners may result in abandoning the syllabus and returning to previous practises, especially for teachers who are new to technology-mediated TBLT (González-Lloret, 2014: 41).

3.6.3.2 González-Lloret's proposed new model of technology-mediated TBLT and needs analysis

In a world where technology is constantly changing a traditional TBLT needs analysis seems incomplete unless technology in TBLT is included. According to González-Lloret (2014: 41), a model of technology-mediated TBLT should include technology at different levels and in different dimensions, particularly if the technology is regarded as a task and not just as a tool. González-Lloret (2014: 42) further explains that in this new model, the tasks contain a language component however, language learning is not the main outcome instead it is a goal and a means of assisting students in the completion of a second language technology-mediated task. In addition, the incorporation of technology for the purpose of increasing technological literacies, becomes a new goal that is blended with the goal of language learning.

In terms of the proposed model of technology-mediated TBLT, technology as well as language tasks are seen to be on an equal footing (González-Lloret, 2014). González-Lloret (2014: 42) emphasises that syllabus designs should not only consist of a set of pedagogic language tasks organized on the basis of specific tasks features and sequenced according to the principles of complexity but should also include pedagogic technology tasks in a similar arrangement and sequence.

In Figure 3-1 below, González-Lloret illustrates the differences between the traditional TBLT and the new model for technology-mediated TBLT.

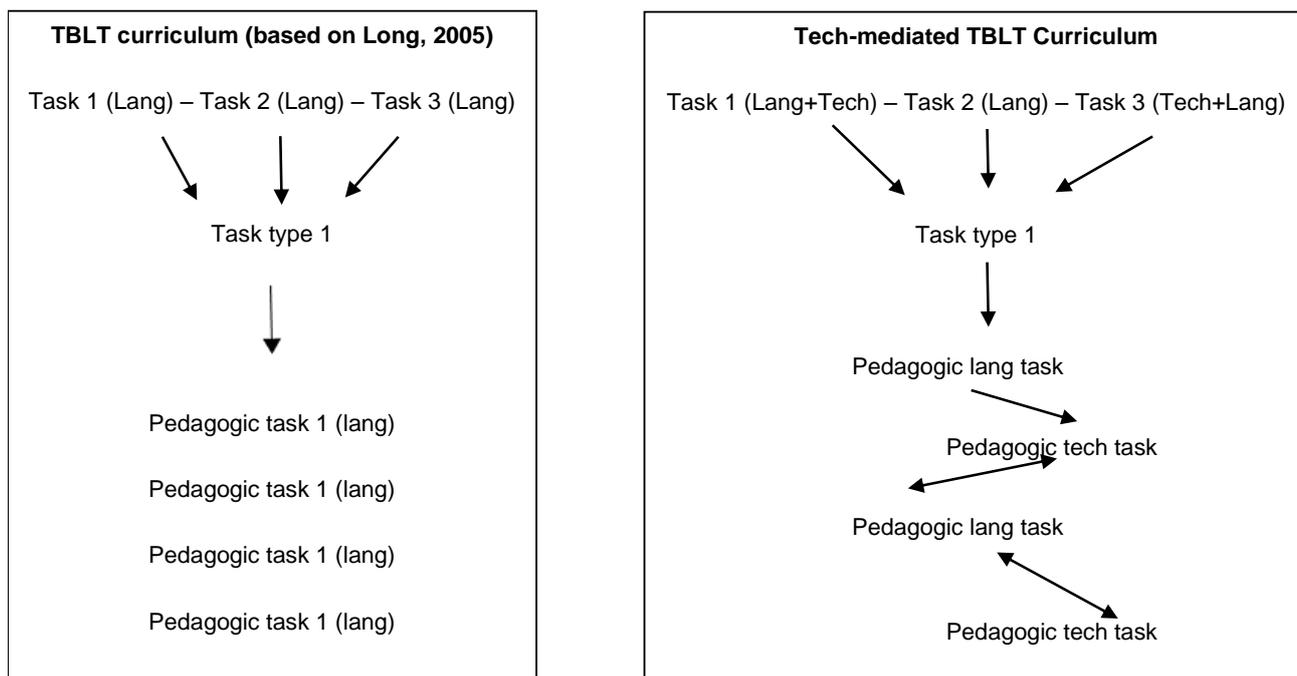


Figure 3-0-1. Traditional TBLT and Technology-mediated TBLT compared (González-Lloret, 2014: 43)

It is evident from Figure 3-1 that language and technology are constantly interacting with each other. González-Lloret (2014: 42) states that pedagogic language tasks define pedagogic technology tasks and these latter tasks need language that can be assisted by the former tasks. Keeping the main TBLT principles in mind and the factors mentioned above, a TBLT syllabus can be created to include several pedagogic tasks. Some of which may focus more on the language needed to complete the task while others on the required technology and digital skills. González-Lloret (2014: 45) stipulates the following important points to consider when developing pedagogic tasks. These include how the language and technology are interwoven; the effect each other may have and how we can learn them and learn to use them.

From this discussion of González-Lloret and Ortega (2014) the field of technology-mediated TBLT is open to more research and exploration. According to Ortega and González-Lloret (2015), this field contains many unanswered questions which requires more evidence. Considering this new framework of technology-mediated TBLT needs analysis and its synergistic relationship with technology will certainly influence the design of future TBLT syllabus.

3.6.3. The implication of technology-based tasks for second language learning

This section discusses the importance of task-based language tasks when integrated with technology and why they are viewed as useful for second language learning. Various different opportunities are available for the inclusion of technological tools in second language acquisition. One example in which technology contributes to language learning is by providing learners input. According to Skehan (2003: 403), input is viewed as a possible source of language learning resources for the both teachers and learners, especially if tasks are designed in a manner that requires learners to use technology to access information and language.

In addition to being a source of input, technology is considered valuable for second language learning for potentially including text, audio and visuals. There are many opportunities available for the inclusion of affordable visual material such videos, sound, images and graphics in technology-based learning material. Skehan (2003) highlights further the possibilities of engaging students to communicate with each other in real-time at different location via real-time video streaming.

Another vital contribution that technology brings forth to second language learning is the capability of allowing learners to focus on form within the language task context. Skehan (2003) contends that although exposing second language learners to input is a valuable contribution, it will not suffice. He stresses that opportunities should be in place for learners to draw their attention to linguistic forms whilst involved in meaning-based communication tasks. Referring to Chapter 2 of this study, Skehan claims how the different task features can have an influence on the complexity, accuracy and fluency of the language that learners engage in during the performance of a task. According to Skehan (2003), task complexity and task accuracy relate to the formal aspects of the language and hence task features that impact on complexity and accuracy in a task will have implications for development, especially on focus on form. For instance, if tasks are less complex (e.g. fewer participants), then learners' attentional capacity will be increased and they then can dedicate their attentional resources to form. Technology can be implemented to reduce task difficulty. In other words, tasks can be made easier perhaps by being a source of readily accessible information required for task performance. The other important implementation of technology is to facilitate FonF. This can be achieved by providing learners enhanced input. The next section of this study discusses computer capabilities to enhance input.

3.6.4 Enhanced input in CALL and Focus on Form in CALL designs

The central role of input in language learning is one of the cornerstones in second language acquisition and has been discussed extensively in this study. As mentioned above the need to enhance input is also essential for learners to facilitate language learning. This section investigates the different types of enhanced input through the use of technology.

According to Chapelle (2003: 40), learners' attention can be drawn to certain aspects of the linguistic input through "input enhancement". The term "input enhancement", introduced by Sharwood Smith (1993), concerns classroom learning material designed with the intention of directing learners to notice targeted aspect of linguistic features or lexical items. There are various options where input can be enhanced by simple changes to learning material such as "marking a grammatical feature in a text, repeating a grammatical form, adding images to text, including translations of complex words or new vocabulary as well as simplifying texts" (Chapelle, 2003: 40).

Chapelle (2003) makes a distinction between the following three general types of input enhancement namely, input salience, input modifications and input elaboration. She further proposes how such enhancements can be achieved into a possible language lesson in a CALL environment.

3.6.4.1 Input Salience

Input salience refers to directing learners' attention to particular linguistic forms or lexical items within the input by means of technology. This kind of focus of form is intended to ensure that learners notice new or difficult forms or lexical items. Noticing of a new language form has been argued by researchers like Schmidt as an important stage in second language development. Skehan (2003) cites Schmidt as stating that in this first stage for language development, learners should draw attention or notice a new form and subsequently integrate it into their existing interlanguage.

According to Chapelle (2003), input can be marked or repeated to be salient. Within CALL tasks, input can be marked by highlighting the structures (e.g. using font format), by printing the words in colour or by simply underlining it. The use of a hyperlink could also be used for marking items. In other words, learners can click on the item itself to view a glossary, a definition, a translation or even hear the item with its pronunciation. Regarding aural input, targeted structures may be marked by pronouncing them forcefully or by allowing a pause after the marked items. Chapelle (2003) states that research does indicate that marking linguistic forms and vocabulary items are beneficial but there have

limitations. Marking input will require further glossing or explanation in order to yield better outcomes. This view is further corroborated by a study conducted by Rott (2007) where the findings showed that repeated visual enhancements did not have an effect on reinforcing word encoding.

Repetition is the second way in which input can be made salient (Chapelle, 2003: 42). According to Chapelle (2003), an increase in input frequency will have an effect on learners noticing the targeted language items. In order for learners to notice a form, it should be adequately repeated and be of some significance. Chapelle (2003) points out that the number of repetitions is dependent on the learner using the feature offered with the repeated forms. This could be done by either providing various examples of the item into the input or providing a choice that allows learners to see or listen to the pronunciation along with the repeated item several times. To accomplish optimal use of repeated input in CALL tasks, CALL task designers may need to explore other possibilities such as comprehension questions or online quizzes to ensure that learners utilise the information offered with the repeated form.

3.6.4.2 Input Modification

Chapelle (2003) proposes input modification as a second method to input enhancement in CALL. Input modification can be defined as the “provision of an accessible rendition of the L2 input” (Chapelle, 2003: 45). In practical terms, this involves making some changes to the original, authentic L2 input that will assist the learners to understand the input. These modifications to the original text could include providing first language translation to learners, the addition of images to the text to facilitate meaning, simplification of the original input to match the learners’ level of understanding. These changes aim to provide learners a better understanding of the selected input. One method of modification that can be built into CALL tasks is including an image or video clip. Using hypermedia links, meaning to vocabulary texts can be provided by an image or a video that describes the meaning of the selected input. Although illustrations are good methods of assisting learners to comprehend the text, it does not work for complex meanings. According to Chapelle (2003: 47), input that contains abstract words or meanings may be difficult to be depicted via graphics. However, Chapelle (2003) suggests that in such instances other types of input modifications may yield better results. This is supported by research findings that indicate that choosing the use of image in combination with other types of modification will likely improve the chances of learners retaining the targeted language structures (Chapelle, 2003: 47).

The next form of input modification can be provided by first language (L1) translations. Chapelle (2003) proposes L1 translations as a way of affording learners access to the meaning of input. Chapelle (2003: 48) states that learners should rely on their own knowledge or explore strategies of working out the meaning of vocabulary items in the target language instead of depending on the L1 translations. However, since then there has been a changing attitude towards L1 translations as a way for providing effective modified input in the learners' first language. This can be achieved by way of using hypertext links in a CALL environment whereby the L1 translations can be visible if the learners click on the word or hovers over word with a mouse pointer.

L2 translations is also considered an alternate type of input. Chapelle (2003: 49) refers to three forms of L2 translations used to develop paper-based reading material in a previous study. Word definitions in the target language can be provided in the text, in a glossary supplied in the margin or by supplying options such as in a multiple-choice format wherein learners are provided a few alternate definitions in the target language and are then required to guess the correct option. According to Chapelle (2003: 49), the second option was the preferred choice as it provided the learners with a straightforward gloss. However, the third option suggested that learners might be able to remember the words definitions if there were some mental activity required on the part of the learner to work out the meanings. Chapelle (2003) points out that the third option which required learners to guess the meaning from a multiple-choice format may have been effective in a CALL environment as the learner could be provided the correct response immediately.

Chapelle (2003) proposes simplification of texts as the third type of input modification. This kind of input modification concerns sentence structure and vocabulary changes made to the text making it more accessible to the L2 learner. There are several ways to achieve a simplified version of the text such as using shorter sentences, using general vocabulary instead of technical ones, reducing the use of idiomatic expressions and reducing embedded phrases. Chapelle (2003: 50) points out that research shows that simplification is effective in assisting learners understand the basic meaning of a text, however this method is not quite effective in assisting learners acquire inferential meaning. This method has been least favoured by researchers, especially for the use of CALL task designs as this type of input modification is uncertain.

3.6.4.3 *Input Elaboration*

Input elaborations concerns grammatical L2 additions to the original text that provides the learner with a better understanding of the text. According to Chapelle (2003: 51), the process of elaboration entails adding phrases or clauses that assist learners in comprehending the difficult meanings of a text without the removal of vocabulary and sentence structure forms. Chapelle (2003) stresses the importance of input elaboration in that structural and lexical complexity should be maintained as it provides learners with dense linguistic input required for acquisition. It is vital to note the differences between paper-based material and designs for CALL tasks in terms of accessing authentic learning material. Whereas elaboration in the former entails the original text be replicated, thus creating a new text via the elaborated input, the latter involves retaining the original text with elaboration implemented via hyperlinks.

The research on input enhancement discussed above provides an invaluable basis for the development of CALL tasks. The three methods of input enhancement proposed by Chapelle provides a synopsis of the different opportunities available to second language teachers. Chapelle (2003: 52) advises that when CALL designers have to select between the various methods, it is essential to keep in mind different characteristics of the target language will need different forms of enhancement. In addition, Chapelle (2003) highlights that by combining the input enhancement options could yield optimal results. For instance, providing repetition or input salience might be a good option with vocabulary acquisition. In order to comprehend new vocabulary, repetition (input salience) could be used by combining images and/or L1 translations given by learners' first language (input modification).

Furthermore, the original text can be elaborated on by additional phrases that will make difficult sentence structures more understandable. Clearly, using all three kinds of input enhancement can be implemented in the same CALL task. This is evident by research conducted by Chun and Plaas (1996) which illustrated the effects of various forms of glossing and annotation during a CALL reading comprehension task for vocabulary acquisition.

Chapelle (2003: 54) raises an important point regarding CALL design and the implementation of input enhancement. She points out that there should be a clear defining connection between the form or vocabulary item within the text and the enhancement added to the text. To explain this principle, when it happens that the connection between the item and its enhancement is not understood to the learner, then the enhancement is unlikely to be effective. Within a CALL environment, this would suggest that

the enhancements such as word glosses, illustrations and word translation and L1 and L2 definitions should be connected closely as possible to the linguistic input that is to be enhanced. Having said this though, CALL designers should keep in mind the visual appeal it will have on the end-users i.e. the learners. The use of hyperlinks will avoid unnecessary confusion on the screen and will help activate the enhancements as and when needed by the learner. In addition, the use of hyperlinks will require learners to explore or tap into their mental faculty in order to make sense of the enhancement by means of clicking on the hyperlink or sliding the mouse pointer.

A final principle on input enhancement is that enhancement should be interactive with CALL learning material. Chapelle (2003: 54) suggests that multimedia may provide an ideal platform in assisting with understanding input interactively as learners are able to read or listen and request input enhancement as required. From the above discussion, it is evident that CALL task designers should design tasks around input enhancements, provided that they are advantageous to the learner. CALL material should also be created in a manner that affords learners an option to select their particular mode for input enhancement, i.e. visual, auditory or written texts. Drawing on the different types of enhanced input in CALL proposed by Chapelle, the pedagogical tasks found in Chapter 5 demonstrate the ways in which enhanced input can be implemented.

3.6.5 *Interaction in CALL environment*

Interaction in second language teaching has taken different meanings. In its broadest definition, the theory of interaction in second language acquisition refers to face-to-face communication, between either the language learner and other learners or the language teacher or other speakers of the target language. Regarding CALL theory, on the other hand, the term 'interaction' is also used to include communication that occurs between the language learner and the computer. In this section, an overview of issues concerning interaction in a CALL environment is provided, particularly the pedagogical implications of interaction in a technological learning context.

The influence of the Interaction Hypothesis to second language acquisition has already been examined in Chapter 2 as well as in Section 3.4 of this study. The effect of this hypothesis on the general development on CALL theory has also been briefly explored. It is evidently clear in second language research literature the vital importance given to interaction. Similarly, in the CALL environment, there is no exception that interaction plays an equally fundamental role.

It is important to differentiate between the basic types of interactions, i.e. interpersonal interaction and learner-computer interaction, when reviewing interaction in the CALL environment. In her discussion of the value of interaction for the process of second language learning on these two types of interaction, Chapelle (2003) outlines three different perspectives of language learning and teaching, i.e. the Interaction Hypothesis, Sociocultural Theory and Depth of Processing Theory.

3.6.5.1 Interpersonal Communication

Interpersonal interaction in a CALL environment refers to interaction by means of a computer between the learner and other learners, between the learner and the language teacher, or between the learner and other first language speakers of the language. According to Chapelle (2003: 57) the benefits derived through the different forms of interaction from the three perspectives mentioned above include negotiation of meaning, co-construction of meaning and encouraging learners to attend to linguistic form. Negotiation of meaning has been well documented in synchronous communication (i.e. a discussion forum or online chat) and during this type of interaction learners may request further assistance from other learners to facilitate a better understanding either in the meaning of lexical items or linguistic features. Negotiation of meaning can be seen in questions to or explanations that the learner will direct to the teacher or it can be through clarifications by other learners through recasts, paraphrasing, definitions of words as well as open discussions on language forms. Not only do learners negotiate meaning but they can also focus on the language form. Chapelle (2003: 58) mentions that in some instances of online communication tasks where interactive written communication is involved, learners have additional time and an opportunity to attend to form and alter their work before sending off their communication.

Interpersonal interaction represents the Sociocultural Theory whereby opportunities are created for learners to co-construct meaning among learners working together in a class setting or in virtual collaborative work (Chapelle, 2003). Learners are able to co-construct meaning in communication tasks in synchronous as well as asynchronous communication tasks if these tasks are designed to share information and to exchange information among learners. Communication task typology proposed by Pica et al. (1993) as mentioned in Chapter 2 and in Section 3.6.1 represents illustrations of tasks in which learners are able to co-construct meaning. Communication tasks such as jigsaw, information gap and decision-making or problem-solving tasks are considered beneficial for co-constructing meaning since these task types work towards a single outcome or task goal, imposing learners to communicate. In an earlier study by Lee (2008), the results indicated positive effects for synchronous

communication between expert and novice language pairs whilst at the same time drawing learners' attention to focus on form. Lee's study found that the expert language users were able to provide scaffolding via corrective feedback on linguistic errors produced favourable outcomes.

The perspective from the Depth of Processing Theory interpersonal interaction through computers is believed to be beneficial in second language learning. According to Chapelle (2003), this theory claims that interaction provides learners with new input that undergoes processing for communication to occur. The processing of input through the computer is seen as "prompting attention to language" (Chapelle, 2003: 56). The interaction is viewed upon as a way of assisting the learner to engage in processing the language as well as attending to both meaning and form. During synchronous and asynchronous communication, this type of interaction involving deep processing of the language can be made possible. This is particularly achievable during asynchronous communication where learners are provided sufficient time to process the new input as there is no time pressure.

3.6.5.2 Learner-computer Interaction

The value of learner-computer interaction for second language learning is evident as the computer functions as a source of enhanced input to language learners, according to Chapelle (2003). The various ways in which a computer can be utilised to provide learners with valuable enhanced input have been discussed above in Section 3.6.4. Chapelle (2003) points out that learner-computer interaction is concerned with two crucial matters. The first involves the quality of input enhancements, which should be provided in a manner that makes explicit the links between form and meaning of the target language (Chapelle, 2003: 59). Chapelle (2003) further points out that the enhancements from this type of interaction with the computer, if provided interactively, will be most beneficial to learners. The second critical issue relating to enhanced input via the computer is whether learners are in fact engaging with the hypermedia while retrieving the input.

Chapelle (2003: 60) cites the research by Plass, Chun, Mayer & Leutner (1998) which indicated that more interaction in the CALL environment reinforced the importance of the interaction. However, from a pedagogical viewpoint, the problem is how to make sure learners interact with the computer to access the enhanced input. Chapelle (2003) suggests when providing learners with enhanced input, it should be viewed as the complete communication task and not as an unplanned piecemeal for interaction. Chapelle points out that in order for learners to engage in interaction with the computer, they need to be interested and motivated.

The discussion above highlights the importance of interaction when using the computer. The basic types of interactions, i.e. interpersonal interaction via the computer or interaction between learners and the computer emphasised the many benefits that can be achieved during interaction. For second language task designers lies ahead the challenge to construct opportunities for learners to draw attention to linguistic form and to integrate input and interaction within tasks so that learners are best provided with these opportunities to develop their language learning.

3.6.6 *Language Production in CALL tasks*

The discussions above explored the value of input in second language teaching and learning in Section 3.6.4, with specific focus drawn to focus on form in a CALL environment. In addition, the benefits of the different kinds of interactions were also discussed in Section 3.6.5. In this section of the study, the primary focus relates to the importance of linguistic production for learners' development in CALL tasks, specifically relating to focus on form within the different stages of task performance.

There is a consensus evident in second language acquisition research suggesting that learners require much more than just input, the need for some focus to linguistic form is essential. In other words, the learners should be able to produce language to acquire a second language. Research shows that attempting to speak and write in the target language has important benefits for the learners' language development. According to Swain (1985) in Chappelle (2003: 61), proposed the term 'comprehensible input' which involves the process of learning by producing a language from a cognitive viewpoint. In another development, Chappelle (2003) points out that Swain highlighted the significance of linguistic production in socio-cognitive terms which focuses on how learners develop language through co-constructing meaning during interaction with other learners in classroom activities. According to Skehan (2003: 398), Swain (1995) expanded on Schmidt's original use of the word noticing-in-input to include noticing in output as well. Swain posited that the learners' own linguistic output is essential for noticing the gaps because this would result in encouraging the learners to produce the language even further. Therefore, this will ensure that learners proceed beyond their current interlanguage and negotiate meaning for effective noticing to occur.

The effects of language production are also evident in the types of tasks used in the CALL environment. A study by Brandl (2012) investigated the effects of required and optional information exchange tasks in a synchronous and asynchronous environment in terms of the quality and quantity of language production. The results suggested that more interaction and language output was generated

in a synchronous mode than in an asynchronous mode. However, learners' performance in an asynchronous mode provided them with time to reflect and understand the task in order to produce more accurate language production than in their performance in the synchronous mode. In other words, learners were less pressured to engage with the task under the asynchronous environment.

Another study by Arslanyilmaz (2013), compared between computer-assisted task-based instruction (CATBI) and computer-assisted form-focussed language instruction (CAFFI). Arslanyilmaz (2013) states that both task-based and form-focussed instruction are indeed effective for enhancing language production however, the results of the study indicated that language learnt via CATBI enhanced overall language production in terms of accuracy, lexical complexity and fluency as opposed to CAFFI.

As discussed in section 2.6 of Chapter 2 that within the implementation of a task-based approach to second language teaching, production takes place in the planning or pre-task phase, i.e. prior to the actual performance of the task. Within a CALL environment, production in the planning phase could provide learners the opportunity to plan before attempting to speak or write for task completion. Chapelle (2003: 62) suggests that this could be achieved when learners receive input (e.g. from a text or audio) and are then permitted to plan in order to produce the language about the task theme. She further points out that CALL task designs should also ensure that learners are given opportunities to negotiate meaning and notice possible gaps in their linguistic production in terms of vocabulary needed or unfamiliar grammatical forms that will affect the quality of the language being produced and the interaction (Chapelle, 2003: 63). Therefore, the opportunities that can be created within the planning phase should be incorporated into CALL pedagogy as this directly influences language production.

During the task performance phase of a CALL design, linguistic production will certainly afford learners the opportunities to notice gaps in their current interlanguage. According to Chapelle (2003: 63), learners can attend to errors either through self-correction or via clues from other learners during the performance of a task. This entails that learners can realize the existence of the gaps within their interlanguage either by self-correcting their linguistic output or they could be made to notice these gaps by other task participants, the teacher or the computer. Chapelle (2003: 64) further includes pre-emptive guidance which a learner would receive during linguistic production output. The value of assistance while engaging in joint error correction will further help learners draw attention to gaps in their interlanguage. It can therefore be assumed that linguistic production before or during performance of a task indicates the significant influence it has on the benefits for a learner's interlanguage development.

3.6.7 Focus on form in task-based CALL methodology

In an earlier section 2.6 of Chapter 2, it was discussed that a task-based lesson would usually include a three-stage methodology. This three-stage approach consists of pre-task activities, during task phase (also known as task performance stage) and post-task activities where learners can be provided activities after performing a task. In this section, the three-stages are revisited to incorporate focus on form in a task-based CALL environment.

3.6.7.1 The Pre-task stage

As discussed in Section 3.6.4 of this chapter, the researcher discussed the different ways of input enhancement and how these may be included within CALL tasks. Input enhancements such as input salience, input modification and input elaboration were discussed in great length. These methods could be included during the pre-task phase of a task-based lesson in order to direct the learners' attention to some aspects of linguistic form. The numerous options using the computer to attain focus on form during this task phase has already been explored in detail in Section 3.6.6.

According to Skehan (2003: 405), the pre-task planning would have “predictable and beneficial effects” upon the performance of the learners as they use the computer to access information via the web. This suggests that learners engaged in this type of pre-task activity would result in more complex and better fluency during task performance. These outcomes suggest a significant influence on second language acquisition. With these pre-task activities, learners should be provided opportunities to engage with the activity to ensure that learners use greater complex features of the language not only to satisfy task matters and accessing information but also to develop their interlanguage (Skehan, 2003). Clearly, the implementation of the pre-task planning does add value to second language acquisition and hence should be incorporated in a task-based CALL methodology.

A range of possible options is available for including planning as part of the pre-task stage of a task-based lesson. Rehearsal and strategic planning are two options that can be implemented within the pre-task planning stage. According to Ellis (2005) rehearsal involves giving the learners time to practise the task before having to perform the actual task. Ellis (2005: 18) reported on several studies that indicate the beneficial effects of rehearsal on task performance. The findings from these studies suggested that there was greater linguistic complexity and more self-evaluation by learners used in the actual performing of a task. However, Ellis (2005) mentions studies showing that rehearsing did not

seem to have an effect on the performance of a new task of the same type, suggesting that there was no transfer of the practise effect despite tasks being of the same type as the original.

The second type of pre-task planning is strategic planning that involves learners getting ready to perform the task by selecting content that will be used for the real task as well as to engage with this content during task performance (Ellis, 2005). By using the computer in strategic planning, it could be seen as a suitable tool for learners to consider content they will require for task performance. When learners plan strategically, they can contribute via online chats, through collaborative work or with the teacher. Strategic planning has an effect on three areas of production, namely fluency, accuracy and complexity. According to Ellis (2005: 20), several studies have shown that strategic planning has a strong influence on learners' fluency during task performance. Regarding the effects of planning on accuracy, Ellis (2005: 22) points out that there were varying results from research and that this was dependent on certain factors such as learners' proficiency level, task type and specific linguistic features. With complexity, Ellis (2005: 23) cites several studies that have indicated that strategic planning has had a positive effect on the complexity of learners' language. Ellis (2005) further points out that by providing learners the opportunity to plan, it leads to more complexity of their production. In a study conducted by Ortega (2005), she argued that learners' attention to both form and meaning is exactly what planning helps learners to attain during task performance. According to Ortega (2005: 107) the value of pre-task planning for long term acquisition is that "it fosters learner's attention to language as a meaning-making tool". As evident from the findings of the above-mentioned studies, the inclusion of a pre-task phase into task-based lessons is undoubtedly essential.

3.6.7.2 The During-task stage

As discussed in Chapter 2 Section 2.6, learners engaged with complex tasks in the during-task phase have limited processing capacity for attending to language production. Likewise, if task performance include synchronous activities, learners may have very limited capacity at their disposal to focus attention to linguistic form. During real-time or synchronous task performance, explicit focus on form may not be possible at times as this may interfere with the flow of interaction. Therefore, it can be concluded that the pre-task and post-task stages are better equipped to provide focus on form than the during-task stage.

As discussed in an earlier section 2.3.5.1 in Chapter 2, task difficulty is influenced by varying factors. According to the processing capacity theory, learners can only process a limited amount of information

at any specified time. During task performance, learners are required to focus on both language and form as well as to cope with communication stress they have to undergo in real-time performance. Therefore, it is essential that factors that determine task difficulty should be taken into consideration at task design stage. Decisions relating to proper selection of task features can influence the during-task phase based on the extent of processing capacity learners have accessible to focus on form. According to Skehan (2003: 406), task features such as task structures may influence learners' accuracy and fluency or levels of interactivity within the task may influence learners' language complexity and accuracy. This implies that focus on form can be stimulated in a CALL environment however; careful decision-making is required during the design phase. Details relating to task features and their effect on task performance has already been explored in Section 2.3.4.5 of Chapter 2.

As mentioned above, using synchronous CMC may limit learners' processing capacity, as the cognitive demand may be greater. However, tasks that include asynchronous CMC for instance emails may afford learners the opportunity to focus on form in the during-task stage. According to Levy and Stockwell (2006b: 97), this kind of asynchronous CMC provides learners the time to edit their own language output by using resources such as dictionaries or requesting help from other learners or the teacher.

3.6.7.3 The Post-task stage

According to Skehan (2003: 406), the post-task phase is seen as the most significant stage when performing CALL tasks. Skehan (2003) proposes two essential benefits of the post-task stage. Firstly, when learners realize that during performing a task that a subsequent activity will follow the completion of that task, learners will tend to focus on accuracy whilst doing the task. Secondly, the post-task stage has the potential in allowing learners to get involved in the task by expanding and incorporating as well as consolidating their interlanguage (Skehan, 2003: 406). This implies that the language teacher should ensure to focus on meaningful post-task activities in order for learners to extend beyond their current interlanguage. In other words, during report back sessions for instance, it is important for learners to rework the material they had acquired from the computer during performing the task. Whilst reworking the material, learners create opportunities to focus on linguistic forms of the target language thereby extending their knowledge and consolidating these forms within their current interlanguage. Moreover, there may be additional computer interaction by learners in the post-task stage if, for example, they are required to use the material discovered from the computer to do some other activity in the during-task stage.

The post-task stage is also regarded as most suitable for attaining focus on form according to the processing capacity theory. Given that the main task phase of the CALL lesson has already been done, greater attention to focus on form will be available to learners during the post-task phase. The reason for this is that cognitive complexity of the task will lessen considerably after task performance. Learners would have familiarised themselves with the content of the task upon completion of the task, thereby inferring a lesser cognitive burden during the post-task phase. In a study conducted by Collentine (2010) lexico-grammatical complexity of the language produced by advanced and intermediate level students in synchronous chat tasks was investigated. Collentine found that both groups of students produced language that is more complex in the post-task chatting activity than in the interrupted-task chatting activity. According to Collentine (2010: 124), time pressure determined the difference in the complexity of the language produced during the chat activities. In other words, the post-task chatting activity placed less time pressure on learners than the interrupted-task activity in order to generate complex language structures.

Moreover, Skehan (2003: 407) emphasises that the inclusion of meaningful post-task activities to pedagogy is for learners to broaden their outlook on the use of the computer not by just seeing it as an end in itself but as a way of extracting information which will lead to more interaction thus expanding their language development. Skehan (2003: 407) further asserts that this could lead to enhanced motivation on the part of the learners as they feel more connected with the task when they reap the rewards of their efforts of the actual task performance. Learners could also extend this motivating force while interacting with the computer to subsequent activities linked to the task. A study entitled 'European Digital Kitchen Project' (Seedhouse et al., 2014) indicated how digital technology can be successfully implemented by performing meaningful real-world tasks that promote language learning and cultures. The pedagogical design of the tasks in this project applied general principles of task-based language teaching and human-computer interaction and successfully implemented the three-stage methodology framework adopted Skehan (1996) in order to provide a learners a real-life situated language learning context. Thomas (2013: 345) points out that projects such as the Digital Kitchen project confirm the close connections between CALL and TBLT and that technology can create opportunities for learners to use a second language beyond the traditional classroom environment.

3.7 Learner autonomy

In Section 3.3 of this chapter, a discussion on how the computer can provide immediate feedback and present material at the learners' pace, encouraging learner autonomy was briefly explored. This section

further explores the development of learner autonomy and the importance of understanding its processes in CALL. Research has shown that CALL can afford learners greater autonomy and can enhance the development of self-paced, autonomous and individualized learning, feedback and evaluation (Chapelle, 2010; Gai, 2014; Heift & Schulze, 2015; Tsai, 2013; Whyte, 2013). Skehan (2003: 408) states that the Internet is a great source for autonomy in language learning but what is more beneficial is using that autonomy in a productive way.

Learner autonomy or independence has received much interest over the last two decades and has gained credibility within the field of language learning and CALL. As cited by Collentine (2011a: 3), Little (1991) states that autonomous learning environments concerns “independent action” and decision-making”. According to Little (1995: 175), the term ‘learner autonomy’ is not a new method or approach but is concerned with learners accepting responsibility for his or her own learning which may lead to socio-affective and cognitive implications. Likewise, Benson and Voller (1997: 1) describe autonomy in language education in five different ways. Firstly, autonomy is utilized in conditions in which learners study independently. Secondly, it is used for a group of skills learned and made practical in self-directed learning. Thirdly, it is used for an innate capacity that is blocked by institutional education. Fourthly, autonomy is used for the application of learner’s responsibility for their own learning and lastly it can be used for determining the way of the learners’ own learning. Nunan (1997: 193), on the other hand, has a different view on the term autonomy where he states that it describes a context whereby the learner is responsible for both the decisions involved in the learning as well as the application of those decisions. According to Nunan (1997: 193), there are different levels of autonomy that rely on certain factors such as the personality of the learner, the goals for studying another language, the philosophy of the institution providing the instructions and the cultural context within which the learning occurs. Nunan (1997) provides an outline on how learning materials can be designed or adjusted so that learners are able to develop autonomy. He suggests five levels for encouraging learner autonomy. The first level is making learners aware of instructional goals, content and strategies that form the basis of the materials they are using. The second level relates to learners active involvement in selecting their own goals from a range of options available. The next level involves learners’ intervention where they can modify and adapt goals, content and tasks on the learning programme. The next step allows learners to generate their own goals and objectives thereby creating their own learning tasks. At the last level, learners can transcend beyond the classroom and make links between the content of classroom learning and the world beyond. Moreover, Nunan (1997: 201) maintains that learner autonomy can be enhanced depending on the contexts and environments in which the teaching and learning occurs.

Several studies have shown the positive effects of autonomy on language learning and particularly within a CALL environment, it is seen as a powerful way for enhancing learner autonomy (Collentine, 2011b; Lee, 2011). In a study conducted by Collentine (2011b), it examined whether learners' choices in a task-based, 3D CALL environment influenced learner production in terms of complexity and accuracy. The study found that complex interaction between autonomy, input and learner production does occur. However, providing choices on a 3D environment may not lead to the production of linguistic complexity or accuracy. Collentine (2011b) states that CALL researchers should not focus just on providing opportunities for learner autonomy but should also take into consideration the role of input - its characteristics and access to input learners will have. In addition, learners provided with a well-developed task to complete in the virtual environment will enhance autonomy (Collentine, 2011a: 63)

Another study conducted by Lee (2011), explored blogging as a way to promote learner autonomy. According to Lee (2011: 87) new technologies such as blogs and wikis has brought with it new dimensions to online learning. Lee (2011: 87) claims that blogging promotes learner autonomy in that learners are responsible for "making their own decisions as to what, how much and when to publish their work". The findings of this study indicated that blogs provided the learners with the opportunity to work independently. However, the study concluded that well-designed tasks, effective metacognitive and cognitive skills as well as Internet access are necessary to explore the possibilities of blogs for learner autonomy.

Reinders and Hubbard (2013: 360) investigated the relationship between the development of learner autonomy and CALL and found that a tension can exist between technology as an affordance and as a constraint. A wide range of affordances of CALL resources is available for the development of learner autonomy, some of which include *inter alia* access, cost efficiency, authenticity, interaction, situated learning and feedback. However, these affordances can also lead to constraints in the development of learner autonomy. In order to overcome these constraints and challenges for developing learner autonomy, Reinders and Hubbard (2013: 372) suggest that learner and teacher training is essential, selecting task materials that match learners' abilities, enhancing peer interaction and learners' metacognitive development and provide support for cognitive, social and affective strategies.

3.8 Learner and Teacher Training in CALL

Earlier sections of this chapter discussed the rapid advancement of technology. Given this burgeoning evolution in the digital world, it is essential that both learners and teachers are provided with adequate training if language learning is to occur within a CALL environment. Learner training and the development of autonomy are essential towards further understanding the processes in CALL (Chapelle, 2003 & 2010; Hubbard & Romeo, 2012; Reinders & Hubbard, 2013).

Research shows that there is diversity in learners and in learner training (Hubbard & Romeo, 2012; Stockwell, 2012a). Stockwell (2012b) points out that the issue of diversity is essential to CALL environment. The various aspects of diversity include diversity in technologies; environments within which CALL is used; pedagogies used; CALL users and diversity in methods for the purposes of research and a better understanding. Apart from technology seen as the most evident aspect when referring to CALL, context too, has a significant impact on the preference of technology and how it is implemented. With such a broad range of technology available, Stockwell (2012b) stresses that it is vital to consider the individual context within which the selected technology will be used. Moreover, factors such as learners, mode of instruction, learning goals, institutional environment, experiences and policies adopted by the educator are to be considered too as they have an effect on decisions regarding technology (Johnson & Brine, 2012).

According to Stockwell (2012b: 3), the most diverse and constantly changing aspect are the learners themselves. Stockwell (2012b: 3) points out that since learners are on the receiving end of the CALL activities and are engaged with the materials presented to them, it is vital that CALL designers consider who their learners are and what outcomes are to be achieved. Learners background, goals, expectations including their lifestyles are important factors to take into consideration when deciding to include CALL in language teaching.

As indicated earlier in Section 3.6.2.1, students are referred to as the Net Generation, iGeneration, or even ‘digital natives’, a term coined by Prensky (2001). Students across many parts of the globe have included technology into their everyday lives through either tablets or smartphones (González-Lloret, 2016: 133). This generation has essentially changed the educational landscape of the 21st century in terms of generation’s literacies and their cognitive and learning process. Due to “this technologization” of young minds, both current and future language teachers need to re-evaluate the way teaching occurs (González-Lloret, 2016: 133). Moreover, it is important to consider principles related to technology

and language use particularly the affordances on digital tools, context, or activity that supports language learning so that in the event of changes in technological advances, these essential principles can be re-examined for its relevance (Chun et al., 2016; González-Lloret, 2016; Stockwell, 2012b).

Therefore, the need for teacher training and education is essential to assist language educators and researchers make informed decisions about how to incorporate suitable technology into their teaching practice (Chun et al., 2016; González-Lloret, 2016; Kılıçkaya & Seferoğlu, 2013; Son, 2014a & 2014b). It has been argued that many CALL teachers are either autonomous or social learners (Son, 2014a). A study by Son (2014a) indicated that there is a need to review the experiences of teachers using online tools in their classrooms. Son (2014a: 174) claims that this review is necessary to understand and improve CALL practice in order to provide better CALL teacher training. Son (2014a: 174) cites Hubbard (2008) who points out that although there is increasing interest in technology proficient language teachers at an institutional level, insufficient CALL training is taking place in teacher training programs. Son (2014a) maintains that it is crucial for the implementation of CALL be based on the teachers' knowledge and skills and that additional CALL training be provided for teachers in order for them to understand how technology can be incorporated into language learning in an effective manner. Considering the fast-paced development of technologies, it is vital that teachers continuously and autonomously improve their knowledge and instructional skills for CALL (Son, 2014a). Further to improving their knowledge and skills for CALL, the onus is on the teacher to familiarise themselves with the available technological opportunities and their appropriateness to particular learning goals and then to implement these technologies, maximising on their specific characteristics (Son, 2014a: 175).

According to Son (2014b), language teachers should continue their professional development for CALL even though they may have some basic knowledge and skills from earlier CALL programmes. Son (2014b: 123) stresses that continued development in CALL is essential due to the widespread inclusion of technology and the mandate for language teacher training and development in the integration of CALL into language and teaching activities as well as in the design, implementation and evaluation of CALL. In another study, Son (2014b) found that lack of time and access to facilities made it difficult for language teachers to include CALL lessons as a regular feature of their language teaching programs. In addition, Son (2014b) pointed out a restrictive curriculum allowing very little space to experiment with CALL; the lack of awareness of CALL potentials by some institutions and a lack of support for teachers to implement CALL or for teachers to gain further knowledge on CALL were some further hindrances.

Similarly, in a study conducted by Kılıçkaya and Seferoğlu (2013), the need for technology education in teacher education was also emphasised. Kılıçkaya and Seferoğlu (2013) stress that change on the part of the language teacher is vital in this technologically advanced world. Teachers need to be trained adequately, not just in technical issues but also in their ability in applying technology in language teaching effectively and appropriately (Kılıçkaya & Seferoğlu, 2013: 31). Kılıçkaya and Seferoğlu (2013) point out that learning styles are ever changing in the digital world. Hence, language teachers are faced with a dilemma. Moreover, teachers should be equipped with the essential tools to meet the demands and the needs of institutions and students who are also to fit into the different educational contexts. Despite these changes, teacher-training programs overlook training in the use of information and communication technology and teachers gain no more knowledge and skills than their own students, in terms of using current technology in life (Kılıçkaya & Seferoğlu, 2013: 21).

González-Lloret (2016) has also stressed the essentialness of teacher training and education for the effective use of technology into the second language classroom. It is important that suitable technological and methodological education are in place. If not, teachers will abandon the technological innovations and revert back to the classroom resources that are familiar to them and feel less-threatening as well (González-Lloret, 2016: 136). As technology infuse our lives, its function is vital in a language classroom. Therefore, researchers and teachers are encouraged to “evaluate new technologies available for their affordances to mediate language and culture learning” (González-Lloret, 2016: 136).

3.9 Integrating technology within the isiZulu syllabus for health sciences students at UKZN

The preferred learning management system at UKZN is the MOODLE software, a free open source software. The institution’s mandate is that all academics use the open access software in their respective disciplines for teaching and learning. Specifically, in the teaching and learning of isiZulu, the inclusion of technology is at its early stages. Moodle is not used only as a platform for discussion forums, posting notices or uploading lecture notes. The use of the quiz tool found in Moodle has also been implemented as it allows for interaction of the learner with the computer. The quiz can be designed using a selection of questions types such as short questions, multiple choice questions, and fill in the blank, matching and short essay type questions that the tool provides. Multimedia options such as audio and video clips can be uploaded as well. The use of the quiz tool corroborates with ‘tutorial CALL’ as mentioned by Heift & Schulze (2015: 147). The implementation of the quiz tool was to make use of the available software at UKZN. Moreover, it was seen as a way to infuse

technology in the teaching and learning of an African language i.e. isiZulu. Although it's main focus was on reinforcing written language practice skills learned within the classroom in order to improve language skills, opportunities for listening comprehension and communicative skills were also included.

A recent study by Singh and Gokool (2018) indicated that students were keen to engage with e-assessments. Students found that the Quiz tool was a great addition to learning isiZulu because of the benefits thereof. Firstly, students indicated that e-assessments was an interesting method of assessing isiZulu. The use of the quiz tool appealed to the students or the 'digital natives' who were motivated and enthused. Secondly, the quiz tool has the option of uploading video and audio clips in the e-assessment. This satisfies the language-learning requirement, which enables students to listen to the targeted language input (i.e. isiZulu) and comprehend the data in order to provide an answer. Thirdly, the system provides immediate feedback. This is important because students can review and revise their errors as well as focus on linguistic forms. Moreover, students are able to understand how their errors have come about and how to correct them, thus encouraging students to perform better in the next round of assessments. With the implementation of the quiz tool as both a formative and summative assessment, learner autonomy can also be fostered. Students are able to go online whenever or wherever to practise formative e-assessments as the system provides unlimited opportunities.

The second method in which technology is used in the broader health sciences curriculum is with isiZulu communication videos (Diab et al., 2016). These videos were developed by clinicians and the isiZulu language educator in order to assist health sciences students with their isiZulu clinical communication skills. The isiZulu communication videos are accessible via Moodle that links the videos to UKZN Tube. It was intended mainly for self-directed learning, but one session is offered per theme as a lecture, i.e. 6 x annually in each of Years 2 & 3, to go through the video content and discuss language use in the consultation. These also assisted students prepare for the objective structured clinical examinations (OSCEs), which include an isiZulu communication station in all four OSCEs of the 2nd and 3rd Years. All students in the first 3 years are linked to a metacourse on Moodle and videos currently.

It is becoming more a reality for language teachers to familiarise themselves with technological aspects and CALL options within the classroom. Language teachers may need to design, implement and evaluate CALL activities in their classrooms at an institutional level. At UKZN, it has indeed become a reality for all academics to adopt Moodle within their classrooms.

3.10 Conclusion

This chapter has reviewed a series of issues related to the incorporation of technology in second language methodology. A discussion of the different theoretical viewpoints and proposals that has led CALL research and contributed to shaping the current investigation of the field has also been undertaken in Section 3.4. CALL research and practice has thus been very influential in many educational decisions and policies. In Section 3.6, it was discussed that technology can be effectively infused to enhance a task-based approach to second language teaching and learning. Moreover, it was shown how technology-mediated second language TBLT and with a rapid growth of technological advances, CALL is now shifted to include other digital devices such as smartphones and tablets. A review of the various ways for enhancing input, stimulating interaction and achieving focus on form in a CALL environment was also investigated in sub-sections of Section 3.6. It was also emphasised that multimedia can be very instrumental for directing learners' attention on grammatical forms through input enhancement techniques such as input salience, modifications and elaborations. This section has also illustrated how focus on form can be successfully achieved in pre-task, during-task and post-task activities of a task-based CALL methodology via the use of computers. However, this can be achieved when considering the cognitive and lexical complexity of tasks. A detailed discussion on the issue of complexity is discussed in the next chapter.

Technology has taken over every aspect of our lives and this has inevitably affected the lives of the students we teach. Second language educators should consider evolving from traditional methods of language teaching to more innovative ones using technology. However, including technology into our classroom activities can be intimidating for many language educators. Being able to understand learners' language needs together with their technological needs are equally important for successful CALL implementation as was illustrated in Section 3.6.2.

In addition to learner needs relating to training of specific software or courseware, language teachers also need professional CALL development and training. Training and professional development is essential to teachers in order to understand how to include technology into their teaching, which should be aligned to learning goals. Since many institutions have placed great emphasis on the inclusion of technology within the teaching context, educators themselves are having to deal with the pressure of this change. Hence, it is vital that institutions provide the necessary training for both learners and educators as was shown in Section 3.7 and 3.8.

For technology to be integrated successfully into a task-based methodology, it is imperative that the CALL designers and researchers be guided by principles of second language teaching and learning theory as well as by learners' digital needs. This is important to consider because as technological innovations escalate and change, language educators and researchers can re-evaluate whether the essentials of second language teaching and learning are still integral to the CALL environment.

CHAPTER 4

AN ANALYSIS OF TASK COMPLEXITY FOR ISIZULU DOCTOR-PATIENT COMMUNICATION

4.1 Introduction

The classification and sequencing of tasks according to the cognitive demands it places on second language learners has generated much attention in the research literature owing to Robinson's Cognition Hypothesis (2001a & 2001b & 2005 & 2007) and the recent version of the SSARC model (Robinson, 2010). Over the last decade evidentiary, empirical based research has been spawning into the effects of task complexity within the framework for task design provided by the Triadic Componential Framework, along the Cognition Hypothesis framework and its implication for task-based syllabus design (Baralt et al., 2014). The central principle of the Cognition Hypothesis concerns the view that the cognitive complexity of tasks should serve as the theoretical basis for instructional task design. As noted in Chapter two, task-based theory posits that increases in cognitive complexity is the guiding factor when sequencing pedagogic tasks for learning purposes (Robinson, 2001a: 287). This factor has been taken into consideration for task-based syllabus design in other earlier studies (Smitsdorff, 2008; Steenkamp, 2009). Smitsdorff (2008) conducted a similar study analysing cognitive complexity and linguistic complexity on doctor-patient conversational tasks in an isiXhosa task-based syllabus design. Steenkamp's (2009) study also analysed cognitive complexity and linguistic complexity in a task-based isiXhosa multimedia curriculum design, with specific reference to focus on form. The aim of this chapter is to explore the use of cognitive complexity and linguistic complexity analyses to inform the selecting, grading and sequencing of tasks for the purpose of syllabus design of an isiZulu specific purposes course for health sciences students. In the present chapter, communication tasks, specific to doctor-patient communication in isiZulu, were simulated accordingly, which identify central task types. An analysis of each target task is conducted to ascertain the level of cognitive and linguistic complexity. Each individual dialogue is scaled in terms of their increases or decreases in complexity.

In Section 4.2, an overview of the key aspects of Robinson's theoretical perspectives on cognitive complexity and task sequencing is presented. In order to make explicit the dimensions of cognitive complexity and linguistic analyses, Section 4.2.1 discusses issues relating to cognitive complexity for grading and sequencing of tasks. This is done in terms of Robinson's Triadic Componential Framework (2005) and the stabilize-simplify-automatize- restructure-complexify (SSARC) Model

(2010) which he postulated. In Section 4.3, an analysis of spoken language units is examined, invoking the theoretical perspectives proposed by Foster et al. (2000). In addition to focusing on the syntactic complexity at sentence and clausal level proposed by Foster et al. (2000), this section also includes syntactic complexity at phrasal level, specifically the noun phrase by invoking the taxonomy model of L2 linguistic complexity constructs initially proposed by Bulté and Housen (2012) and later modified by Bartning et al. (2015). A few selected examples from the isiZulu target tasks are provided and analysed. This chapter does not attempt to conduct a corpus analysis, nor does it represent a statistical analysis of the communication tasks. It identifies salient occurrences of isiZulu phrasal complexity within the dialogues for the purpose of focus on form instruction. These isiZulu noun phrases may include, *inter alia*, demonstratives, nominal and clausal relatives, semantic and descriptive possessives (Poulus & Msimang, 1998). With isiZulu being a highly inflected language, like African languages generally, linguistic complexity is a characteristic of these languages (Collentine, 2010). Recent studies claiming that tasks should be sequenced according to an increase in cognitive complexity for the development of learner's interlanguage system to meet the increasing demands of the task is also considered (Gilabert et al., 2011; Kuiken & Vedder, 2011; Robinson, 2011a; Yousefi et al., 2012). Section 4.4 briefly discusses discourse structure of the doctor-patient communication (Silverman et al., 2005). Thereafter, twelve communication tasks are analysed accordingly to identify their communicative purpose and the language functions used to realise the communicative purpose in Section 4.5. In addition, each communication task is analysed in terms of its task typology, cognitive complexity, and syntactic complexity as well as scaling of tasks according to the SSARC model.

Various communicative tasks are represented by one authentic and eleven simulated doctor-patient conversations in isiZulu based on medical students in training using the Calgary Cambridge guide for enhancing communication process skills (Kurtz, Silverman, Benson & Draper, 2003). The Calgary Cambridge process guide is a framework for conducting a medical interview. The process of interviewing a patient consists of several stages, namely, initiating the session; gathering information; providing structure to the consultation; building the relationship; physical examination, explanation and planning and closing the session.

Although the majority of the communication tasks have been simulated and recorded by final year MBChB students, one of the tasks is an authentic recording of a medical student clerking an isiZulu-speaking patient during their clinical practice at King Edward Hospital in Durban. With the simulated dialogues, care was taken to ensure all relevant aspects of communication in an authentic consultation were included. A medical practitioner has verified the medical content of the dialogues for accuracy

and sufficiency and factual inaccuracies were amended. An isiZulu language specialist has also verified the language content. The history taking, which represents real-life clinical settings demonstrates a degree of variation depending on the consultation. For example, a first consultation versus a subsequent one will be different in content. The content of the consultations relate to either primary health care or specialised discipline. It should be noted that when using the Calgary Cambridge guide for communication in isiZulu, the use of the open enquiry technique as used with English should be avoided at the early stage of the consultation. For instance, the isiZulu expression corresponding to ‘Tell me about/more about your problem’ is an example of an open enquiry technique. A closed enquiry question technique would be preferred to be used for an isiZulu consultation. This question technique resonates with the distinction made by Loschky & Bley-Vroman (1993) about open and closed tasks. While information exchanged between learners are unrestricted and indeterminate in open tasks, in closed tasks, the information shared in a task is discreet and determinate. According to Loschky & Bley-Vroman (1993: 125) closed tasks are best suited in teaching grammar as it will trigger more negotiation of meaning thus making it possible for comprehension. In addition, closed tasks promote greater focus on form in language production.

Section 4.6 examines the discourse-analytic properties about how a target task can be descaled into simpler versions. It also examines, for the purpose of teaching and learning, how each version of the task can gradually increase in complexity, first along the resource-dispersing dimensions followed by increasing the resource-directing dimensions. Final comments of this chapter follows in section 4.7.

4.2 The Cognition Hypothesis and second language task design

The dominating factor relating to task-based language teaching concerns the question how to determine the complexity of communication tasks. Long (2014: 231) argues that the issue of task complexity relates to assuming that if an increase in task complexity increases the complexity or accuracy of the language learners use to accomplish them, then students would tend to work gradually towards tasks that are more complex. This could potentially lead to increased interlanguage development. Moreover, it has been argued that the success of second language instructional design is determined by the understanding of cognitive abilities of students and their individual attributes. Students differ in their understanding of a given task. Some students may have a higher cognitive ability enabling them to perform the task successfully while others may find a task cognitively challenging and difficult to complete. As discussed in section 2.3.5.2 of Chapter 2, learners’ individual differences can include

various variables such as age, motivation, learning context and aptitude, all of which significantly influences second language learning.

Robinson (2010) has produced an insightful series of studies and research papers on the classification and sequencing of tasks based on three fundamental components, namely task complexity, task difficulty and task conditions. These issues have been discussed in detail in Section 2.3.5.2 of Chapter 2. The present section focuses specifically on how cognitive complexity can inform the classifying and sequencing process of pedagogic tasks. In addition, focus is placed on how manipulating task complexity in second language learning may be beneficial within the process of a CALL design.

4.2.1 Task-based language development and task performance

The central aim of task-based approaches to second language is not only to provide opportunities for second language production to flourish but also to create conditions for second language acquisition to progress, hence for further second language learning and development (Robinson, 2005: 2). According to Robinson (2005: 2), although there is a distinction between performance and development, these processes do however correspond in terms of how it can be differentiated or stimulated by the use of task demands. Robinson (2005: 2) proposes that there are two different kinds of dimensions regarding task demands. The first type of dimensions are “those that can be manipulated to stimulate access to an existing L2 knowledge base (such as planning time)” (Robinson, 2005: 2). The second type are “those which can be manipulated to push learners to go beyond this to meet the demands of a task by extending an existing L2 repertoire (such as making increasing demands on the conceptual/linguistic distinctions needed to refer to spatial location, temporarily, or causality)” (Robinson, 2005: 2). During task design, Robinson (2005: 2) states that both the performance and developmental dimensions can be manipulated separately. However, he further maintains that they can be drawn on simultaneously during performance and developmental dimensions in a second language during the design of a task as there could be possible synergies between both dimensions (Robinson, 2005: 2).

Further to the complex demands of tasks, emphasis is placed on the quality and quantity of interaction associated with complex task performance in the theory of task-based learning. Robinson (2005: 3) examines Krashen’s Comprehensible Input Hypothesis and cites Krashen by stating that “unconscious acquisition” will be facilitated when learners are provided with meaningful language exposure during task performance. However, according to Robinson (2005: 3), Krashen does not place much importance to language production or focus on form. Robinson (2005: 3) argues that task-based

learning that has been sequenced according to increases in the complexity of a task will lead learners to more noticing, processing and retention of input received. In addition, he maintains that with greater amounts of complex interaction, learners will be encouraged to analyse more of the input and output during task work. In light of this view, Robinson (2005: 3) maintains that cognitive processing as well as the interactive consequences of task sequencing are equally responsible for task-based language development.

The claims regarding cognitive processing and interactive demands of tasks proposed by Robinson constitute the theoretical foundation of the Cognition Hypothesis of task-based second language learning and task sequencing. Robinson (2005: 3) posits that the Cognition Hypothesis has three explicit projections about cognitive demands of tasks when increasing the complexity of a task. His first expectation claims to “push” learners to attain more accuracy and complexity in an effort to handle the present even more challenging, communicative demands of the task. The second expectation claims to stimulate interaction and negotiation activities thus encouraging the attention, noticing and incorporation of forms made noticeable in the input. The last prediction states that with increases in complexity, variables such as individual differences (e.g., working memory) and affective factors (e.g., anxiety and motivation) will greatly affect task-based second language performance and learning.

4.2.2 The Triadic Componential Framework and second language task design

One of the main objectives to researching information demands of tasks and the outcomes they may have on learning and performance is to develop practical task-sequencing criteria (Robinson, 2005: 3). As reviewed in Section 2.3.5.2 of Chapter 2, Robinson proposed the Triadic Componential Framework (2001a) to provide researchers with criteria, which can be used to analyse complex classroom learning situations. Three task features of task demands involved in real-world task performance are referred to as task complexity, task conditions and task difficulty. Baralt et al. (2014: 13) argues that these three parameters serve as a tool for “manipulating the complexity level of a task in order to inform task sequencing”. Further explanation was given between the terms ‘task complexity’ and ‘task difficulty’. ‘Task complexity’ refers to the inherent cognitive complexity of tasks, which controls learners’ attentional resources when performing a task whereas ‘task difficulty’ refers to the individual factors that learners bring to the task (Baralt et al., 2014; Robinson, 2011b).

In the Triadic Componential Framework, a contrast is drawn between two fundamental sub-categories that can influence the cognitive complexity of tasks, i.e. resource-directing and resource-dispersing

characteristics. Robinson (2005:4) refers to **resource-directing variables** to include the following aspects:

- Tasks requiring learners to communicate in events happening in the present time, with other participants as opposed to referring to past or future events occurring elsewhere;
- Tasks that require only a few elements as opposed to those which include many other similar elements making it challenging for learners to identify and differentiate; and
- Tasks that concern simple transfer of information compared to those that impose an explanation about the information.

With the **resource-dispersing dimensions**, Robinson (2005) includes the following characteristics:

- Planning time may or may not be provided to learners during task performance;
- Tasks may require learners to perform only a single task as compared to those that may require more than one task to be performed; and
- Tasks may or may not take away prior knowledge required for the performance of tasks.

In order to meet the additional task demands, Robinson (2005) argues that learners do not require the direct use of a language code when increases along the resource-dispersing dimensions occur. Robinson (2005: 7) asserts that attentional and memory resources are only distributed when planning time is reduced or prior knowledge of a context is removed or when a greater number of tasks are meant to be performed at the same time. Hence, the changes along these dimensions serve to increase learners' ability to access and knowledge during the performance of a complex skill. According to Robinson (2005: 7), by increasing the complexity along the resource-dispersing dimensions is important because it facilitates the conditions under which real time language is used.

By examining the effects of task complexity based on the two variables above, Robinson (2005: 7) suggests that learners could make an effort to utilize the conceptual/functional conditions of tasks onto speech if complexity is increased along the resource-directing variables. On the other hand, Robinson (2005) maintains that accuracy, fluency and complexity could be affected negatively if complexity is increased along the resource-dispersing dimensions, as it could be difficult for learners to access their current second language knowledge. Moreover, Robinson (2005: 7) maintains that the effects of task complexity evident on speech that is increased along resource-directing variables (+reasoning demands), could be much stronger on the speech, if the task is made simple along the resource-dispersing variables (+planning time/+prior knowledge).

4.2.3 Influences of task complexity on language production and language learning

Much research on task-based second language has been related to the effects of task complexity on the quality of learner production (Robinson, 2005: 7). Concerning the effects on accuracy and syntactic complexity along the resource-directing variables, Robinson (2005) refers to Givon (1985) and Purdue (1993) who both predicted similar claims to that of his own predictions. While Givon (1985) claims that increased structural complexity can be complemented by functional complexity in syntax, Purdue (1993) argues that acquisition can be pushed since learners participate in discourse activities of communication tasks. Robinson (2005: 8) cites first language acquisition researchers such as Lindholm (1988) who argue further that language acquisition can be regarded as linguistic and cognitive complexity since complex language sentences are learned at an advanced stage because more attention and effort is needed on the part of the learner. In a similar manner, second language production as well, can be affected by increases in functional or cognitive demands of second language communicative tasks. This would mean that there is a shift from the pragmatic mode to the syntactic mode. In line with these claims, Robinson (2005: 8-9) advanced his argument by citing Rohdenburg (2002) stating that in more cognitively complex environments, learners will opt for explicit preferences where grammatical options are more or less complex. This is likely to be the outcome in the case of a complex oral task performed along the cognitive resource-directing variables as illustrated in Tables 4-1 and 4-2.

By escalating the conceptual and functional stresses of tasks, the attention of learners are likely to be targeted to the differences between their first and the second languages. In this regard, learners may respond positively on accuracy in the production of the second language (Robinson, 2005: 9). Talmy (2000) in Robinson (2005: 9) states that there is a distinction between “open-class lexical and closed-class grammatical subsystems in language based on grammaticizable notions”. While meanings in the open-class forms can consist of a variety of words describing a wide context, meanings in a closed-class subsystem are restrained. Robinson (2005: 9) notes that forms can be grammaticized within specific conceptual domains however; this grammaticization will differ between the languages. In learning a second language, there will be instances where different conceptual distinctions will need to be grammaticized. According to Robinson (2005: 9), accurate grammaticization can be achieved by increases in the cognitive and conceptual demands of tasks as well as drawing learners’ attention to overlapping areas between the first and second languages. Robinson (2005: 10) point out further that if there is some manipulation with the design features of tasks and if the learners’ cognitive and

conceptual demands are increased, learners could be stimulated to use complex grammatical devices as opposed to elementary ones.

The influences of task complexity on language learning has also been noted. According to Robinson (2005: 10), language can be used to facilitate the greater complex resource-directing task demands. Further to these task demands, Robinson (2005: 10) argues that focus on form is essential so that semantic and conceptual demands of communicative content can be made meaningful. Robinson (2005) proposes that focus on form will assist the learner in noticing the language input of difficult tasks. In other words, these difficult tasks require more mental and communicative effort, deep processing and more attention and memory resource allocation to input in comparison to simpler tasks (Robinson, 2005: 11). Another suggestion made by Robinson (2005) is that cognitively complex tasks that are oral interactive in nature will result in greater amounts of interaction and modified repetitions will occur. Thus, an interactive context is required for more complex task performance (Robinson, 2005: 11).

Tables 4-1 and 4-2 below illustrates the different dimensions of the cognitive complexity of task features.

Table 4-0-1. Resource-directing (developmental) and resource-dispersing (performative) dimensions of complexity and their implications for task sequencing (Robinson, 2005: 8)

<p>—few elements —no reasoning —here—and-now</p> <p>+planning +prior knowledge +single task</p> <p>3 LOW PERFORMATIVE AND HIGH DEVELOPMENTAL COMPLEXITY</p>	<p>—few elements —no reasoning —here—and-now</p> <p>—planning —prior knowledge —single task</p> <p>4 HIGH PERFORMATIVE AND HIGH DEVELOPMENTAL COMPLEXITY</p>
<p>+few elements +no reasoning +here—and-now</p> <p>+planning +prior knowledge +single task</p> <p>1 LOW PERFORMATIVE AND LOW DEVELOPMENTAL COMPLEXITY</p>	<p>+few elements +no reasoning +here—and-now</p> <p>—planning —prior knowledge —single task</p> <p>2 HIGH PERFORMATIVE AND LOW DEVELOPMENTAL COMPLEXITY</p>

Table 4-0-2. The Triadic Componential Framework for task classification – categories, criteria, analytic procedures and design characteristics (from Robinson, 2007a, cited by Robinson, 2010)

<i>Task Complexity</i> (Cognitive factors)	<i>Task Condition</i> (Interactive factors)	<i>Task Difficulty</i> (Learner factors)
(Classification criteria: cognitive demands)	(Classification criteria: interactional demands)	(Classification criteria: ability requirements)
(Classification procedure: Information-theoretic analyses)	(Classification procedure: Behaviour-descriptive analyses)	(Classification procedure: ability assessment analyses)
a. Resource directing variables making cognitive/conceptual demands	a. Participation variables making interactional demands	a. Ability variables and task-relevant resource differentials
+/- here and now	+/- open solution	h/l working memory
+/- few elements	+/- one-way flow	h/l reasoning
-/+ spatial reasoning	+/- convergent solution	h/l task-switching
-/+ causal reasoning	+/- few participants	h/l aptitude
-/+ intentional reasoning	+/- few contributions needed	h/l field independence
-/+ perspective-taking	+/- negotiation not needed	h/l mind/intention-reading
b. Resource dispersing variables making performative/procedural demands	b. Participation variables making interactant demands	b. Affective variables and task-relevant state-trait differentials
+/- planning time	+/- same proficiency	h/l openness to experience
+/- single task	+/- same gender	h/l control of emotion
+/- task structure	+/- familiar	h/l task motivation
+/- few steps	+/- shared content knowledge	h/l processing anxiety
+/- independency of steps	+/- equal status and role	h/l willingness to communicate
+/- prior knowledge	+/- shared cultural knowledge	h/l self-efficacy

In summary of the Cognition Hypothesis, Robinson (2005: 20) argues that more uptake and incorporation of input is possible if task complexity is escalated, thereby leading to more long-term learning from the input. In addition, complex task performance can also be affected by individual differences, and so task complexity on production is affected too. According to Robinson (2005: 20), there is evidence that support more interaction and negotiation of meaning taking place with increased task complexity as well. The effects of task complexity are also evident on language production, which is found to be less fluent. Baralt et al. (2014: 18) state that the features of task design illustrated in the Triadic Componential Framework discussed above can be implemented within a “task’s level of cognitive complexity.”

4.2.4 The SSARC model of pedagogic sequencing of tasks

Baralt et al. (2014: 18) point out that Robinson's (2010) simple-stable-automatization- restructuring-complexity (SSARC) model makes particular suggestions on how to sequence tasks according to the features depicted in the Triadic Componential Framework, in a manner as to increase complexity. This is important to support the findings of suggested perspectives of how language learners are affected in task-based language-learning programs. In terms of situating and distributing task cognition, Robinson (2010: 246) emphasises that, at the initial stage of the instructional design, learning should be encouraged by scaling down the complexity of real-world tasks by presenting simple, more manageable versions of tasks to learners. The subsequent descaling and increasing of the 'real-world veridicality' of target tasks that learners perform can lead to attaining optimal use of the second language (Robinson, 2010: 246). In other words, complex tasks can then progressively follow by increasing the cognitive complexity learners can achieve. This process is known as task sequencing. According to Robinson (2010: 247), this sequencing of tasks encourages cumulative learning. Since each task differs very slightly from the previous one, cumulative learning can occur. In addition, task sequencing increases the conceptual and communicative challenges, which requires learners to alter and develop their interlanguage resources to sustain task demands.

Increasing task complexity can involve reasoning about the intentional states that may require learners to perform actions (+ intentional reasoning). Where learners merely describe their actions (– intentional reasoning), there is a possibility for learners' attention to be directed to 'noticing' linguistic aspects. With the removal of planning time (– planning time), cognitive complexity can be further increased but the attentional resources of tasks are dispersed without any particular linguistic links (Robinson, 2010: 247). According to Robinson (2010: 247), task complexity that can be increased along the resource-dispersing variables focusses attention to form-function/concept mappings which potentially leads to interlanguage development. On the other hand, task complexity that is increased along the resource-directing variables also increases access of learners to linguistic resources. Based on the operationalization of the claims on Cognition Hypothesis and drawing on the Triadic Componential Framework for task classification discussed above, the SSARC model illustrates two instructional-design principles for sequencing of tasks, which Robinson suggests as an "operationally feasible proposal for task-based syllabus design" (Baralt et al., 2014: 16).

Task Sequencing Principle 1: Only the cognitive demands of tasks contributing to their intrinsic conceptual and cognitive processing complexity are sequenced. In terms of this principle, tasks

requiring no intentional reasoning are performed at the initial stage, followed by those tasks that do require intentional reasoning. To ensure semantic processing, it is essential to reproduce the interactive demands of tasks when pedagogic tasks are performed. Moreover, this reproduction of interactive task is vital for successful transfer of interactive task performance to real world use (Robinson, 2010: 247).

Task Sequencing Principle 2: Increase resource-dispersing dimensions of complexity first (e.g. from + to – planning time), and then increase resource-directing dimensions (e.g. from – to + intentional reasoning). Following this assumption, tasks that are simple on all variables (e.g. + planning, - intentional reasoning) are performed as the first step. This suggests that tasks will draw on the simple, stable (SS) “attractor state” of the current interlanguage. It is necessary that the next step increase complexity along the resource-dispersing dimensions (e.g. - planning, - intentional reasoning). In so doing, faster access to and automatization (A) of the interlanguage system is developed. In the last step, it is essential to increase complexity on both resource-dispersing and resource-directing variables. With this rise in complexity, restructuring (R) of the interlanguage system takes place. Moreover, new form function/concept mappings are developed along resource-directing variables of task demands. It also highlights maximum complexity (C) that the interlanguage system destabilizes (Robinson, 2010: 248).

The steps illustrated above comprise the SSARC Model. This model is used to increase the complexity of second language pedagogic tasks. The SSARC Model can be described as follows: *i* = current interlanguage state; *e* = mental effort; ‘*s*’ = simple task demands; ‘*c*’ = complex task demands; *rdisp* = resource dispersing dimensions of tasks; *rdir* = resource directing dimensions of tasks and *n* = potential number of practice opportunities on tasks.

The steps of SSARC Model can be summarized as follows:

Step 1:	SS	=	$i \times e ('s'rdisp) + ('s'rdir) n$
Step 2:	A	=	$i \times e ('c'rdisp) + ('s'rdir) n$
Step 3:	RC	=	$i \times e ('c'rdisp) + ('c'rdir) n$

4.2.5 *Scaling of tasks and task complexity*

As discussed in section 4.2.4, Robinson (2010: 248) maintains that it is essential that tasks be sequenced only according to the increases in their cognitive complexity. The effects of increases in cognitive complexity is evident in several research studies (Ishikawa, 2007; Kuiken & Vedder, 2008).

The study by Ishikawa (2007) examined the influences of skilfully controlling task complexity along the [+/- here-and-now] variable on second language written narrative discourse. The findings of this study claim that by increasing cognitive complexity, there would be more accurate and complex second language production. Other claims include more interaction and noticing of forms made salient in the input. The Triadic Componential Framework, used to research these claims as well as to operationalise task design and task sequencing decisions, distinguishes three categories of task characteristics, i.e. task complexity, task difficulty and task conditions (Robinson, 2010: 249).

According to Robinson (2010: 249) task complexity relates to cognitive factors that affect their “intrinsic cognitive challenge”. It also concerns the outcomes of the more or less demands tasks have on “conceptualisation, attention, memory and reasoning processes during task performance”. Robinson (2001b & 2005 & 2010) posits that the characteristics that contribute to the cognitive complexity of tasks are those of resource directing and resource dispersing. Robinson (2010: 249) argues that resource-directing variables create communicative demands for learners, which position their interest and effort at formulating ways that the linguistic second language system can assist them to meet.

It is essential that learners comprehend how this conceptualization may be so. Further to this, it is crucial that learners adopt appropriate functional processes. According to Robinson (2010: 249), cognitive linguistics is an approach that reconfigures first language patterns of conceptualization to connect the linguistic constructions used in second language for conceptual language task performance. To illustrate this approach, second language tasks that need complex reasoning will be expected to draw on cognitive linguistics and the application of complex syntax. Thus, promoting a conscious use of complex syntax in second language. In another example where the performance of tasks requires complex spatial reasoning, it will tend to highlight the use of production regarding motion events. Hence, these tasks may promote an awareness of lexicalization patterns within the task performance in second language learning (Robinson, 2010: 249, 251).

In another variant, Robinson (2010: 251) states that tasks may also require reference to incidents happening now, thus getting learners to familiarise themselves with the use of the present tense. Such tasks will be using the Here-and-Now dimension. On the contrary, tasks that are more complex may require the use of cognitively demanding reference to incidents taking place elsewhere in time and space, i.e. the use of the past tense or the future tense. This is referred to the There-and-Then feature, which requires extra effort on conceptualization as well as on memory. At this stage, it is essential that

learners' conceptual abilities be developed so that they are competent to use the past tense as well as to use expressions referring to absent things. Robinson (2010: 251) argues that as languages have the potential to grammaticize, lexicalize and syntacticize the conceptual domains, it is important to increase the conceptual demands along these variables of simple to complex. He further maintains that learners should be able to remap linguistic conceptualization as well as notice the differences in mapping of the first language from the second language. This will enable learners to develop their interlanguage ability (Robinson, 2010: 251).

Resource dispersing task characteristics tend to place performative and procedural demands on cognition. However, there is no direct learner attention to conceptualization of specific aspects of the language if increases to the complexity of the cognitive demands are made. According to Robinson (2010: 252), if tasks are difficult in terms of their performance, by removing planning time for instance, then the interest of the learner will be distributed over linguistic and non-linguistic items of the task. Attention may be further spread over non-linguistic aspects of tasks if tasks are made complex by including additional tasks demands. Robinson (2010: 252) claims that when learners perform such increasingly complex tasks, then interlanguage development is enhanced. With reference to the work of Bialystok's (1994), Robinson (2010: 252) states that while complexity expanded along resource-directing variables will promote in-depth investigation, increases in complexity along the resource dispersing dimensions, on the other hand, will lead to higher regulation over the interlanguage systems of knowledge.

An example of how the dimensions of task complexity can be selectively combined in an increasingly complex sequence of pedagogical task versions, based on the SSARC Model is described in Section 4.6.

4.2.6 Task conditions and task difficulty

In Table 4-2 below, Robinson (2010: 254) makes a distinction between task complexity and task conditions. While task complexity concerns the intrinsic cognitive complexity of tasks placed on learners, task conditions, on the other hand, refers to two categories of task characteristics that place interactional demands on learners when performing real world tasks and pedagogic tasks. These characteristics are postulated in the SSARC model and are relevant for performing pedagogic tasks. Moreover, these characteristics are held constant at all times when pedagogic tasks are performed in a progressively cognitively complex sequence. According to Robinson (2010: 254), the replication of

the interactive demands of tasks every time from simple to more complex tasks will lead to the development of memory and interactive task performance. Robinson's perspective which is based on the views of Schank (1999) claims that his rationale increases the potentials for "reasoning, dynamic memory and schema learning and elaboration" (Robinson, 2010: 254).

Referring to task conditions in Table 4-1 below, Robinson (2010) draws a distinction between interactional demands on task performance and interactant demands. As discussed in section 2.3.4.4 of Chapter 2, the task typology proposed by Pica et al. (1993) is also supported by Robinson. Drawing on their proposal, Robinson states that interactional demands of tasks require either the flow of information from one person to another (i.e. one-way flow of information) as in the case of a person leaving a message on voicemail or shared face-to-face information exchange (i.e. two-way flow of information) for example, asking the patient questions about an ailment. In addition, tasks may also require learners to provide only one correct solution (+ closed task) or learners may be required to provide more than one than solution or any possible solution (+ open task). In terms of the interactant demands, Robinson (2010: 254) states that these demands relate to the similarities and differences that occur between learners, which involves their interactional role, gender, proficiency and background knowledge.

With regard to task difficulty as illustrated in Table 4-2, Robinson (2010: 254) states that it relates to the abilities and affective factors evident during task performance and learning by second language learners. According to Robinson (2010: 254), two learners may differ in their abilities when performing a task. One learner may find the task either more difficult or simple than the other learner, thus participant variation between them can be evident. Robinson (2010: 255) emphasises that the SSARC model of task sequencing proposes that only task complexity characteristics are skilfully controlled when tasks are designed for learners.

In Section 4.5 below, twelve communication tasks are analysed in terms of Robinson's Triadic Componential Framework (2005) and SSARC (2010) model for task analysis.

4.3 Analysis of spoken language

According to Foster et al. (2000: 354), it is essential to measure the frequency of specific discourse features (e.g. confirmation checks, clarification requests and self-corrections); the frequency of certain grammatical features as well as the quantitative measure of frequency related to grammatical accuracy,

syntactic complexity and fluency of the language. In order to ascertain the frequencies, it is necessary to separate the language data into different units. This process is essential for language development analysis (Foster et al., 2000: 355).

In assessing spoken language performance by dividing it into separate units, Foster et al. (2000: 355) argue that “more” usually means better. They state that ‘more’ can refer to two distinct elements, i.e. productivity and complexity. When measuring first language performance of older children and second language measurement, it can be a challenge working with the productivity element only. Although resources may be limited, cognitive maturity in these children may often result in high productivity. However, highly productive performances that lack high complexity is not much value as opposed to productivity with complexity (Foster et al., 2000: 355).

Foster et al. (2000: 355) refer to other studies, which have concentrated on ‘chunks’ of spoken language. These studies are related to psycholinguistic processes, particularly the planning processes. According to Foster et al. (2000: 355), the planning processes can be differentiated between both “macro- and micro-planning processes” that are concerned with composing speech. Foster et al. (2000: 355) point out that while macro planning relates to extended stretches of speech such as multi-sentences; micro planning on the other hand, involves shorter units such as a clause or sentence. These researchers explain that proficient speakers are able to handle the complex micro-units, hence allowing the speaker to respond with complex sentences within a shorter timeframe. Consequently, this could lead to better flow of information and an improved working memory. Further to this, speakers will be able to adjust the sequence of information. In keeping up with the complex micro units, the speaker will be mindful of the syntactic requirements and limitations of the condition, which should be attended to within task performance. Foster et al. (2000: 356) point out that proficient speakers are those who have the ability to understand where they are in the language syntactically. This can be evident in the case of adult native speakers who depend more on memorised sequences of language when under communicative pressure. In the case of non-native speakers, they tend to focus on word-by-word processing. In so doing, these speakers can increase their complexity, fluency and accuracy when not under communicative pressure (Foster et al., 2000: 356).

According to Foster et al. (2000: 356), it is essential to take into consideration the profile of the speaker. Being aware of what the performer can do in a single portion of micro planning activity is equally important. In addition, it is vital to understand how particular types of plan may influence the

complexity, accuracy and fluency of the language that is being produced by the language speaker (Foster et al., 2000: 356).

In terms of the definitions of units, Foster et al. (2000: 358) provides three broad categories, i.e. semantic, intonational and syntactic. Each of these categories are discussed in the following paragraphs. The first group of speech units refer to semantic units. These semantic units are further divided into three segments. These include proposition (includes one main argument and one or more predictions about this argument); C-unit (semantic focus including utterances such as words, phrases and sentences, grammatical and ungrammatical, providing referential or pragmatic meaning) and idea unit (semantic focus which is based on chunks of information and are seen cohesively in its surface form by the speaker).

According to Foster et al. (2000: 358), these semantic units are based on information or meaning chunks, which can be seen as appealing. However, this definition may be problematic since the extent of an idea or the argument is difficult to determine. Thus, making it difficult for analysts to work reliably if based solely on the definitions of semantic units. Semantic units will be useful when used in conjunction with grammatical or intonational units (Foster et al., 2000: 358).

The second category of speech units is referred to as intonational units. According to Foster et al. (2000: 359), this group include tone units, idea units and utterance, with each having a central focus of intonation. Pausing is also included as a secondary feature. Units that focus on the intonation and the use of the pausing features can be problematic for second language speakers because of the moods in their tone of speech and use of pausing. Foster et al. (2000: 359) point out that pauses that occur during second language performance are difficult to distinguish, as these pauses often result from message formulation or lexical search. It can happen with fluent first language speakers as well where they produce sub-clausal tone units. The intonational criteria is seen as unstable however, it can be complemented with other criteria such as syntactic units (Foster et al., 2000: 359).

The last category of speech units, which has the potential to bring about great reliability and validity, according to Foster et al. (2000), is the syntactic units. These units include the sentence, idea unit and the T-unit. The idea unit refers to a clause with its pre- and post-clause elements. Non-finite subordinate clauses and finite relative clauses where the relative pronoun is present is also included under idea units. Foster et al. (2000: 360) point out that the T-unit is the most popular when analysing

written and spoken language data. Foster et al. (2000: 360) refers to Hunt (1966: 735) who offers four versions when defining T- units. These include:

- ‘one main clause with all subordinates attached to it’;
- ‘one main clause plus whatever subordinate clauses happen to be attached to or embedded within it’;
- ‘the shortest units into which a piece of discourse can be cut without leaving any sentence fragments as residue’;
- ‘a main clause plus all subordinate clauses and non-clausal sentences attached to or embedded in it’.

Foster et al. (2000: 360) state that these above four versions of the T- units propose that ‘non-clausal sentences’ as well as ‘sentence fragments’ can be either included or excluded from an analysis, depending on which T- unit has been adopted. However, Foster et al. (2000: 360) refers to Tarone (1985) who has criticised the definition of the T-unit, stating that it was inadequate to analyse the recorded speech of learners because it contained dysfluent speech, incomplete sentences and hesitations, as well as repetitions.

In trying to make the T-unit correlate with the elliptical constructions of the spoken language, Foster et al. (2000: 361) cite the proposed definition of C-units as described by Loban (1966). Communication units (C-units) are “grammatical independent predication(s) or ... answers to questions which lack only the repetition of the question elements to satisfy the criterion of independent predication...’Yes’ can be admitted as a whole unit of communication when it is an answer to a question such as “Have you ever been sick?” (Loban 1996:5-6). With Loban’s definition in mind, Foster et al. (2000: 361) point out that the elliptical constructions occur within a speaker’s turn and does not link to the question of the interlocutor. According to Foster et al. (2000: 361), the choice amongst these units is between the clause-based (i.e. the clause itself, the S-node and the Idea unit) and supra-clausal (the C-unit and the T-unit). Whilst the clause-based units allow for easier analysis, the supra-clausal units provide much more validity.

Foster et al. (2000: 363) examined four typical features of oral performance in order to illustrate how the use of C-units can prove to be difficult. The first of these features is concerned with the adverbial clause “because”; the optional adverbial clauses introduced by it and its function as a discourse marker. The pause and intonation incidents takes place within the discourse function. The question left unanswered was whether “because clauses” should be allowed independent status. The second feature

related to co-ordination. According to Foster et al. (2000: 363), the T-unit criteria suggests that coordinated main clauses should be ideally treated as separate units. Moreover, it also proposes that coordinated verb phrases with the same subject should be viewed as a single unit. The third feature examined by Foster et al. referred to the topical noun phrases. Bygate (1998) in Foster et al. (2000: 364) states that independent noun phrase units commonly feature in speech. These noun phrase units are also a common feature in second language, where particularly for learners whose first language is topic-comment language. Foster et al. (2000: 364) considered scaffolding and interruptions as the last feature of spoken language. According to Foster et al. (2000: 364), interactive conversations usually involve active participation by speakers building up to a conversation. Analysing these interactions can be problematic when assigning the unit. Foster et al. (2000: 365) argue that both first language oral data and oral data of second language are difficult to segment into units for the purposes of analysis. In order to achieve the required analysis, it is essential that standard unit be accessible. This standard unit should be explicit, exemplified as well as psycholinguistically valid. Foster et al. (2000: 365) stress that it is necessary that this unit of analysis be reliable in order to be applied to an extensive range of oral data.

The present study utilizes the AS-unit of analysis for analysing the communication tasks as defined by Foster et al. (2000). The main reason for selecting this unit was its appropriateness for analysing spoken data that is used in this study. The data information included in tasks (i.e. tasks 1- 12) used in this study are written simulated versions of possible doctor-patient consultations who are first language speakers of isiZulu. Task 12 is a written transcription of an authentic recording of a medical consultation.

Before attempting the analysis of the spoken language, a discussion on the analysis of the speech unit (AS-unit) is provided. According to Foster et al. (2000: 365), the AS-unit is mainly a syntactic unit. The AS-unit is seen as a suitable unit for analysing speech data for two reasons. First, regarding the speech of native-speakers, the syntactic units are seen as valid units of planning as many pauses take place at the syntactic unit. The second reason suggested by Foster et al. (2000) is that speech units, which are mainly syntactic, give learners the opportunity for planning multi-clause units. Foster et al. (2000: 365) suggest that it is vital for planning at the multi-clause level as it serves to establish the proficiency of the learner as well as the level of complexity that occurs during specific performances. According to Foster et al. (2000: 365), an AS-unit is described as a single speaker's utterance that contains an independent clause or sub-clausal unit, plus any subordinate clause(s) that are related with either. An independent clause can be referred to a clause containing a finite verb. An independent sub-clausal unit can be defined as an AS-unit, which contains "either one or more phrases which can be

elaborated to a full clause by means of recovery of ellipted elements from the context of the discourse or situation” (Foster et al., 2000: 366). Foster et al. (2000: 366) refers to Quirk et al. (1985) who further defined an independent sub-clausal unit as a minor utterance, which falls under “irregular sentences”, or as “nonsentences”. Within the AS-unit, a subordinate clause may consist “minimally of a finite or non-finite verb element plus at least one other clause element (subject, object, complement or adverbial)” (Foster et al., 2000: 366).

Foster et al. (2000) examined other frequent phenomena in oral language data that can occur in second language and explains how to overcome these situations. They define false starts as an utterance, which has begun and then either abandoned or reconfigured in some other way. If an AS-unit is produced prior to a message being abandoned, then that particular part which meets the criteria of an AS-unit will be considered an AS-unit and the rest will be disregarded as a false start.

Regarding repetitions, Foster et al. (2000: 368) state that this feature is where speakers repeat previously produced speech. It is strategy that may be used to “hold the floor or to allow time for planning on line”. It is important to contrast between repetitions indicating dysfluency from those used for rhetorical effect (Foster et al., 2000: 368). Self-correction refers to when a speaker recognizes a mistake during or immediately following the produced speech and reconfigures the speech; thereby including an element of structural change (Foster et al., 2000: 368). According to these researchers (2000: 369), topicalization refers to noun phrases that belong to the unit of which they are the topic. The last phenomena that Foster et al. (2000: 369) refer to is “interruption and scaffolding”. These are common features in highly interactive discourse.

Foster et al. (2000: 370) propose three distinct levels of application of the AS-unit whereby analyst can make exclusions of data from their analysis without compromising their work. The first level is used for a complete analysis of the entire data, including single inaudible words but excluding untranscribable data. At level two, highly interactional data can be used. At this level, one-word minor utterances, word for word as well as verbatim echo responses can be excluded from the analysis. The third level is used for analysing non-fragmentary AS-units. At this level, researchers are keen on knowing what the speaker can do when producing relatively ‘complete units’. Excluded data from this level consist of the same elements from level two, verb-less elliptical AS-units as well as AS-units that concern substitution of clause, predicate or predication level. Level three can also eliminate one or two-word greetings and closures. It is evident that this level introduces a greater degree of standardization of the unit (Foster et al., 2000: 371).

Studies that have invoked AS units to measure linguistic performance, include those by Ishikawa (2007) and Kuiken & Vedder (2011). These studies showed how task complexity affects structural complexity. In the study conducted by Ishikawa (2007), the results indicated that there was greater syntactic complexity as well as accuracy found in written narratives when participants used the past tense [-Here-and-Now] as compared to the present tense [+Here-and-Now]. Kuiken & Vedder's (2011) study, on the other hand, was based on the effects of task complexity and linguistic performance in both written and oral mode. This study found that fewer errors were made in the oral mode as compared in the written mode where syntactic complexity was slightly higher.

Thus far, this chapter has presented a discussion on Robinson's cognitive complexity models and linguistic complexity measures in terms of units of speech, which are based at sentential-level and clausal-level. Attention is now given to syntactic complexity at phrasal level, with reference to the noun phrase by invoking the taxonomy model of L2 linguistic complexity constructs initially proposed by Bulté and Housen (2012) and later adapted by Bartning et al. (2015). Similar to the study conducted by Bartning et al. (2015), which examined linguistic complexity in the noun phrase in spoken L1 and L2, this study, too describes syntactic structural complexity at phrasal level, drawing specific attention to the noun phrase in L2 isiZulu. The purpose of this type of further analysis on linguistic complexity is not used to measure high-level proficiency in isiZulu, like in the study by Bartning et al. (2015), which measured noun phrase complexity of advanced L2 French learners. Instead, it is used to identify salient occurrences of nominal modifiers or phrasal complexity evident in the communication target tasks, which can be used to inform decisions regarding grading and sequencing of tasks. In addition, phrasal complexity can be considered in the methodology design, particularly with reference to focus on form.

4.3.1 Syntactic complexity at phrasal level

In order to measure complexity in L2 performance, various taxonomies of the different levels of linguistic and cognitive complexity have been conceptualized (Bartning et al., 2015; Bulté & Housen, 2014; Housen et al., 2012; Pallotti, 2015). Many of these constructs are applied to measure complexity, accuracy and fluency dimensions in L2 performance. The proposed simplified model of a taxonomy of complexity construct by Bartning et al. (2015), which has been informed by the theoretical paradigm and taxonomy advocated by Bulté and Housen (2012) and Pallotti (2015), has been adopted as a framework for this section of linguistic complexity. Figure 4-1 illustrates the various hierarchical

levels of linguistic complexity, i.e. phonological complexity, grammatical complexity and lexical complexity. Although this study acknowledges both syntactic and morphological complexity, the latter is excluded as it entails further examination into verb inflections and derivational words. Focus is on syntactic complexity, which is a component of grammatical complexity that features three further subcomponents, i.e. sentential, clausal and phrasal complexity. Attention is drawn to the last level subcomponent of the hierarchy, i.e. phrasal complexity, which relates specifically to the noun phrase level. The reason for selecting the noun phrase level is that salient occurrences of nominal modifiers are evident in all communication target tasks. Noun phrases used in this study include lexical heads with modifiers such as prepositional phrases, demonstratives, descriptive and semantic possessives, quantifiers, adjectives and relative clauses. It is important to identify salient features of nominal modifiers because these grammatical structures are essential for completion of tasks (cf. task-essentialness) and can inform syllabus designers to incorporate such structures that guide FonF inclusion.

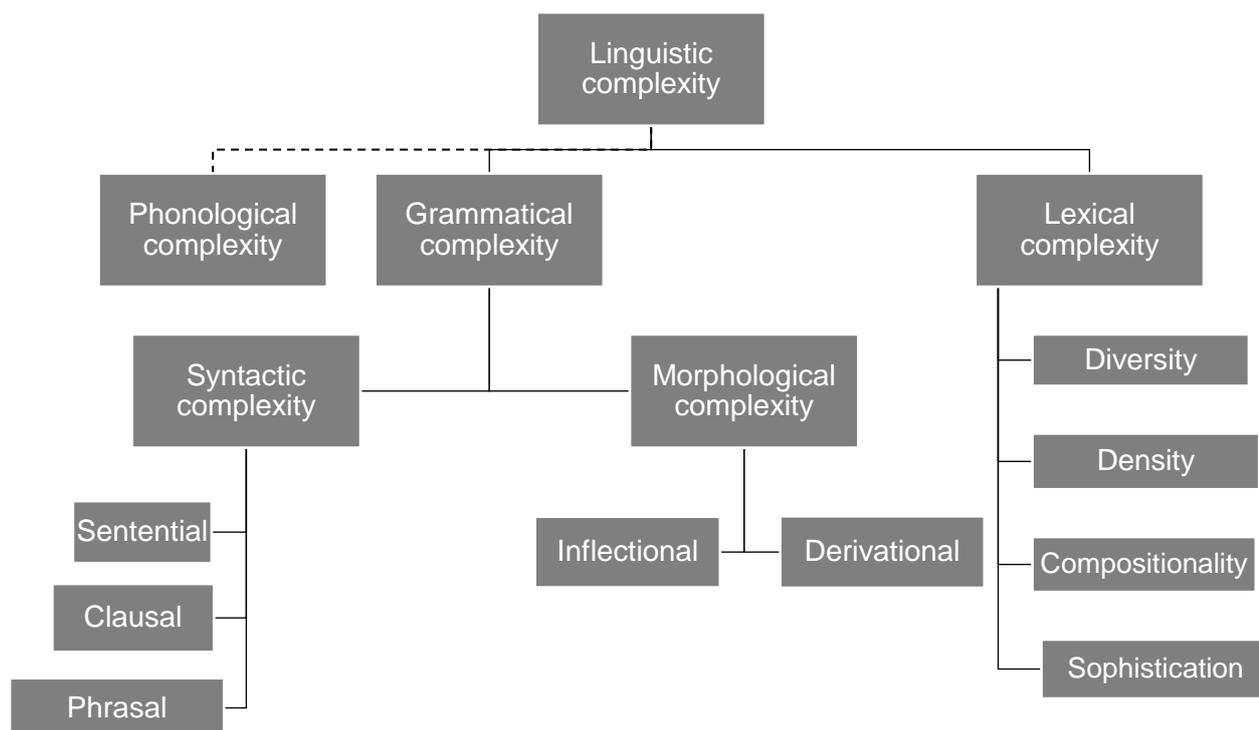


Figure 4-1. A simplified version of “a taxonomy of complexity constructs” in (Bulté & Housen, 2012: 23), referred to by (Bartning et al., 2015: 184, Fig. 1)

A few selected examples from the isiZulu target tasks are provided and analysed at the end of the directive phase of each dialogue. As mentioned, this chapter does not aim to conduct a corpus analysis

nor does it represent a statistical analysis. It does however, identifies salient occurrences of phrasal complexity within the dialogues for the purpose of focus on form instruction.

4.4 Discourse structure of the doctor-patient communication

As indicated in Section 4.1, the structure of the doctor-patient communication isiZulu interviews are based on the Calgary-Cambridge guide to a medical interview and emphasises a patient-centred clinical approach (Silverman et al., 2005). The medical interview includes the biomedical, contextual and patient perspectives. The Calgary-Cambridge guide provides evidence-based strategies that can be used to improve medical students' competence in communication (Matthews, 2013). This method also emphasises the importance of both content and process in the medical interview (Kurtz et al., 2003). It is essential that the process skills of second language learners be developed as this will give them the confidence and motivate them to use the language skills and further improve their abilities in the clinical context. At the same time, this communication process will build and improve rapport with their isiZulu-speaking patients (Matthews, 2013). In order for students to simplify questions and “chunk” relevant content into easily mastered phrases in isiZulu and sections in isiZulu linked to common problems faced in daily practice, certain process skills such as repetition and paraphrasing can be used in second language interviews (Matthews, 2013). The basic framework for the Calgary-Cambridge guide to the medical interview consists of the following various stages.

Table 4-0-3. The Calgary-Cambridge guide to the medical interview (from (Kurtz et al., 2003)

Initiating the session	<ul style="list-style-type: none"> • Preparation • Establishing initial rapport • Identifying the reason(s) for the consultation
Gathering information	<ul style="list-style-type: none"> • Exploration of the patient's problems to discover: <ul style="list-style-type: none"> ○ The biomedical perspective ○ The patient's perspective ○ Background information -context
Physical Examination	
Explanation and planning	<ul style="list-style-type: none"> • Providing the correct amount and type of information • Aiding accurate recall and understanding • Achieving a shared understanding • Planning: shared decision making
Closing the session	<ul style="list-style-type: none"> • Ensuring appropriate point of closure • Forward planning

Each of the dialogues on doctor-patient communication can be divided into the different phases as described in Table 4.3, i.e. the initiating the session; gathering information; explanation and planning and closing session. However, the isiZulu dialogues in Section 4.5 reflect the initiating the session, gathering information and providing structure to the consultation stages only. These phases on doctor-patient communication tasks are analysed according to task complexity analyses, which includes three dimensions, namely, interactional complexity, cognitive complexity and syntactic complexity.

In addition to making specific references to the Calgary Cambridge framework, the isiZulu communication tasks below are also divided into the following general moves, which can be characterised into three broad phases, i.e. the introductory phase, the diagnostic phase of questioning, instructing and explaining and the directive phase.

(i). The Introductory Phase

The introductory phase of the doctor-patient communication tasks is characterised by greetings, exchanging pleasantries and identifying the reason(s) for the consultation. This segment of the dialogue usually consists of sentences in the present tense.

(ii). The Diagnostic Phase of Questioning, Instructing and Explaining

This phase can be characterised as the gathering of information phase, which can further be subdivided into the following sub-categories:

- a. The Pre-examination phase
- b. The During examination phase and
- c. The Post-examination (prognosis) phase

These phases form part of the consultation existing between the doctor and the patient. It is at this stage that the doctor identifies the problem and explores the problem in terms of the biomedical perspective, the patients' perspective and the contextual background information. Usually, the doctor starts by asking questions to probe into what resulted in the patient's problem. The patient narrates his /her medical history, family history and any other relevant information that may assist the doctor. Thus, this is referred to as the narrative phase and events are told using the past tense. After gathering enough information from the patient, the doctor conducts a physical examination of the patient. Whilst examining the patient, the doctor gives clear instructions, which the patient has to follow. This phase usually concludes with a prognosis, which entails providing accurate information to the patient,

recalling and understanding the patient's illness as well as planning the way forward with shared decision making between the doctor and patient.

(iii). The Directive Phase

This 'closing the session' phase as referred to in the Calgary Cambridge guide entails providing the patient with specific and appropriate instructions regarding future treatments or procedures. It may also include the doctor directing the patient what to do once the consultation is complete, i.e. collect medication from the pharmacy, and go to the nurse or the X-ray department. This phase is also characterised by greeting and expressing gratitude (give thanks). Communication in this phase are typically spoken using the present tense.

4.5 Analysis of the doctor-patient communication tasks

Twelve communication tasks written in isiZulu with the English translations provided are analysed below. The first eleven tasks represent semi-authentic clinical content while the last communication task is an authentic medical interview between an isiZulu-speaking patient and a final year MBChB student. A task descriptor or "target discourse sample" (Long, 2015) introduces each communication task, with each task identified by language functions, each of which can be classified as task-naturalness, task-utility and task-essentialness. Thereafter, the target tasks are analysed in terms of task complexity analyses. These analyses include three dimensions namely, interactional complexity, cognitive complexity and syntactic complexity. The interactional complexity analysis includes a task typology, which is based on the framework by Pica et al. (1993). Robinson (2007: 14) alludes largely to Pica et al's proposals by emphasising that "interaction is an important context and opportunity for activating processes thought to contribute to second language acquisition". The cognitive complexity analysis is based on Robinson's Triadic Componential Framework (2005), initially constructed from his Cognition Hypothesis. Thereafter, the descaling/decomplexification analysis of target tasks in terms of the Robinson's (2010) SSARC model follows. The last analysis concerns the syntactic analysis based on Foster et al.'s (2000) Analysis of Speech Unit Model. It also concerns the linguistic complexity proposed by Bulté and Housen (2012, 2015) as cited in Bartning et al. (2015). This analysis is applied to the isiZulu version of the communicative tasks.

4.5.1 Task descriptor 1

Ungudokotela osemsebenzini ngesikhathi kufika kukaGijimani Mkhize ongowesifazane oneminyaka engama 65 ubudala oze esibhedlela. Ubezwa ubuhlungu emathanjeni akhe nasemalungeni akhe. Mbingelele bese umbuza ngomlando wakhe, ubuze nenkinga yakhe. Mbuze uma unazo yini ezinye izinkinga nanokuthi ubuzwa nini ubuhlungu. Ukutshela ukuthi useke wenza i-x-ray, ukucela ukuthi umchazele i-x-ray. Mqinisekise ukuthi uzomhlola bese umchazele imiphumela ye-x-ray. Qedela ingxoxo yakho ngendlela efanele.

You are a medical doctor on duty at a local hospital when Gijimani Mkhize who is a 65-year-old female comes to the hospital. She has been experiencing pain in her bones and joints. Greet the patient and conduct a history taking, asking the patient to explain her problem. Ask the patient if she has any other complaints and when does she feel pain. The patient informs you that she has done an x-ray and requests you to explain it to her. Reassure her that you will examine her and explain the results of the x-ray to her. Conclude your interview appropriately.

4.5.1.1 Dialogue 1

D = Doctor

P = Patient

[Language functions]

- D: Sawubona mama. Unjani? (*Hello. How are you?*) (1)
[Greeting]; [Asking well being]
- P: Yebo dokotela, ngiyaphila. Wena unjani? (*Hello doctor, I am fine. How are you?*)
[Response to greeting and well-being]; [Asking well being]
- D: Ngiyaphila, ngicela ungiphe imvume yokuthi ngikubuze imvume yokukubuza imibuzo mayelana nenkinga ekulethe lapha esibhedlela. (*I am fine, can you please give me permission to ask you questions related to the problem that brings you here to hospital.*)
[Response to well being]; [Requesting permission to ask questions]
- P: Ayikho inkinga dokotela ungabuza. (*No problem doctor you can ask.*) (7)
[Giving permission]
- D: Ngiyabonga. Ngicela ungitshele ukuthi yini ekulethe lapha esibhedlela, sengisho ukuthi iyiphi inkinga yakho. (*Thank you. Please tell me what brings you to the hospital, I mean where is your problem?*) (10)
[Enquiry regarding patient's visit and nature of problem]

- P: Dokotela senginezinyanga eziyisithupha ngigula, ngiqaqanjelwa amathambo ikakhulukazi lawa asemalungeni ezandla kanye nalapha ezinyaweni. Ngaqala ngangayinaka lento ngoba bengijwayele ukuqaqanjelwa amathambo kodwa lokhu sekuqala ukungisabisa manje ngoba angisalali ebusuku. Kuthe emva kwezinyanga ezimbili ngavele ngaya emtholampilo lapho banginika khona amaphilisi amhlophe ezinhlungu bangitshela ukuthi uma ziqhubeka izinhlungu kumele ngiye ukubona udokotela noma ngiye esibhedlela ukuze benze i-X ray. Ingakho ke ngilapha dokotela. (*Doctor it has been six months since I had been sick, I have severe pain in my bones especially in the joints of my hands and my feet. At first, I did not notice this because even before, I had this pain but now it is starting to scare me because I do not sleep well at night. After two months I went to clinic, they gave me white painkillers, and told me if it continues I must go to see the doctor or I must go to hospital so that they will do an X- ray. That is why I am here doctor.*) (24)
- [Description of medical condition/Presenting complaint]
- D: Ngiyezwa. Kungabe kukhona kwezinye izindawo lapho uzwa khona ubuhlungu? (*I hear you. Is there any other place where you feel pain?*) (26)
- [Enquiry about any other problems]
- P: Yebo isinqe siyangibulala. (*Yes, the lower back is very painful.*) (27)
- [Description of additional problems]
- D: Kungabe ubuzwa nini lobu buhlungu? (*When do you feel that pain?*) (28)
- [Enquiry regarding onset of pain]
- P: Amathambo aqaqamba kakhulu ebusuku noma uma ngithinta amanzi abandayo njengoba kubanda nje kulezi zinsuku angilali ebusuku. (*I feel severe pain in the bones at night or if I use cold water because these days it is very cold at night, I do not sleep.*)
- [Description of discomfort]
- D: Kungabe kukhona okunye okuzwayo ngaphandle kokuqaqamba kwamathambo? (*Is there any pain you feel other than the pain from the bones?*)
- [Enquiry into further discomfort or pain]
- P: Cha. Kusemathanjeni nasemalungeni kuphela. (*No, it is only just bones and joints.*)
- [Confirmation of current pain]
- D: Ugcine uyenzile i-Xray? (*Did you do an X-ray?*) (37)
- [Enquiry into any procedures done]
- P: Yebo yenziwa kodwa bangitshela into engingayizwa kahle. (*Yes, I did but I did not understand their explanation.*) (39)

[Response into procedure done]

D: Ngicela ungivumele ngikuhlole lapho uzwa khona ubuhlungu. Sizobe sesibheka i-X-ray yakho bese siyakhuluma ukuthi sizoqhubeka kanjani. (*Please allow me to check where you feel pain and then we will look at the X-ray and then talk about how to proceed*). (43)

[Giving instruction], [Indication to view x-ray results], [Stating intention]

P: Kulungile. (*It is fine*). (44)

[Affirmation]

D: Ngiyabonga ngesikhathi sakho (*Thank you for your time*.) (45)

[Expression of gratitude]

P: Kubonga mina dokotela. (*Thank you doctor*). (46)

[Expressing appreciation]

4.5.1.2 Task Complexity

Task typology – interactional complexity

Task 1 is an example of an information gap task according to Pica et al.'s task typology. One participant holds all information that needs to be accessed by the other participant, in order to complete the task. In lines 8-43, participant X (patient) holds the information that is unknown to the other participant Y (doctor). According to Table 2-1 (see section 2.3.4.4 in Chapter 2), the features of this task configure towards a two-way flow of information and corresponds to interactant relationship 1b and interactant requirement 2b. Both participants (doctor and patient) work together toward a convergent goal and a single outcome. The doctor and the patient want to obtain all the relevant information that they both do not know, i.e. the doctor needs to know how to proceed further and the patient needs to understand the X-ray. Therefore, they are also relating to the descriptions of goal orientations 3a and outcome option 4a in Table 2-1. In order to reach the convergent goal (+) and the single outcome (1) of the task, interaction is required (+), according to Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2).

(i). The introductory phase

Cognitive complexity

Lines [1- 24] constitute the introductory phase or the initiating the session phase. These sentences are analysed in terms of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimension.

The communication in this **introductory segment** takes place between the doctor and patient in lines [1-24] and is conveyed using both the present and past tenses. Thus, representing the [- here-and-now] feature of Robinson's developmental complexity dimension (2005). Moreover, these sentences consists of an extensive amount of information when narrating and answering questions about the presenting complaint. These include causal reasoning in sentences of lines [14] **ngoba** (because), [17] **kumele** (you should), **ukuze** (so that) and [18] **ingakho** (that is why) thus representing the [- no reasoning] feature. Examples of temporal references are evident in sentences of lines [11] **senginezinyanga eziyisithupha** (it has been six months), [14] **ebusuku** (at night) and [15] **kwezinyanga ezimbili** (two months) and spatial locational references are illustrated in sentences of lines [4] **esibhedlela** (at hospital), [12] **asemalungeni** (in the bones), **ezinyaweni** (on the feet) and [15] **emtholampilo** (at clinic). These examples indicate the [- few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a high-level segment of developmental complexity.

This segment does not represent a single task example as it contains the task of greeting, asking after health and requesting permission to ask questions. However, the content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the characteristics of [- single task], [- planning] and [- prior knowledge] along the resource dispersing dimension of Robinson's Cognition Hypothesis, which illustrates a greater level of performative complexity and high developmental complexity. Thus, this phase exhibits features that fall in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and high developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

In the introductory phase, the task places great demands on the participants in that it requires participants to reason, narrate events that happened in the past as well as events that took place at different places and times. It also indicates to the participants that no prior knowledge and no planning time are provided. Furthermore, participants are expected to perform multiple tasks. According to the SSARC model (Robinson, 2010), this phase can be descaled by manipulating the task characteristics of the task. For example, the participant in the role as the doctor could be given planning time [+ planning] to perform only a single task [+ single task]. Prior knowledge could also be provided [+ prior knowledge]. In addition, the participant in the role as the patient could be required to avoid or limit the use of reasoning [+no reasoning], narrate the presenting complaint using the present tense [+here-and-

now] as well as reducing the location or spatial references [+few elements]. This descaling process of the task conforms to Step 1 of the SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal levels

In this introductory phase of dialogue 1, both shorter and longer complex sentences are evident. Lines [1] and [2] contain simple mono-clausal sentences. Line [3] contains one example of a simple sentence **ngiyaphila** (I am fine) that is in the present tense indicative mood. However, the complex sentences that follow in lines [3-4] consist of several clauses. The main subjunctive clause **ngicela ungiphe imvume** (please may have permission) is followed by a possessive conjunction **yokuthi** (that) that introduces another complement clause **ngikubuze imvume yokukubuza imibuzo** (please give me permission to ask questions) that contains the possessive concord **ya-** used with the infinitive verb **ukukubuza** (to ask). This is then followed by another subjunctive subordinate clause introduced by the adverb **mayelana** (related) with an associative copulative clause **na-** in **nenkinga** (to the problem). In the sentence, **mayelana nenkinga ekulethe lapha esibhedlela** (related to the problem that brings you here to hospital), the word **esibhedlela** (at the hospital) is an adverb of place.

In line [8], the sentence **ngiyabonga** (I thank you) is a simple sentence. The sentence in lines [8-9], **ngicela ungitshela ukuthi yini ekulethe lapha esibhedlela, sengisho ukuthi iyiphi inkinga yakho** (please tell me what brings you to the hospital, I mean where is your problem) illustrates a complex sentence. The main subjunctive clause **ngicela ungitshela** (please tell me) is followed by the conjunction **ukuthi** (that) which introduces the question clauses **yini ekulethe lapha esibhedlela** (what brings you to the hospital) and **sengisho ukuthi iyiphi inkinga yakho** (where is your problem).

Lines [11-18] contain several compound clauses. The sentence **dokotela, senginezinyanga eziyisithupha ngigula, ngiqaqanjelwa amathambo ikakhulukazi lawa asemalungeni ezandla kanye nalapha ezinyaweni** (Doctor it has been six months since I had been sick, I have severe pain in my bones especially in the joints of my hands and my feet) is an example of a compound clause. The sentence **senginezinyanga eziyisithupha ngigula** (it has been six months) in line [11] consists of three clauses, the main clause, which contains a relative clause **eziyisithupha** (which is six). This clause is then followed by two consecutive clause complements that express the narration of events by the patient in **ngiqaqanjelwa amathambo ikakhulukazi lawa asemalungeni ezandla kanye nalapha ezinyaweni** (I have severe pain in my bones especially in the joints of my hands and my feet). The degree of syntactic complexity is illustrated in the use of the past tense passive indicative clause in **ngiqaqanjelwa** (severe pain) followed by a demonstrative **lawa** (these) and the possessive and

locative phrase **asemalungeni ezandla** (in the joints of my hands). A further complement clause is introduced by the conjunction **kanye** (and), followed by a locative clause of **nalapha ezinyaweni** (and here on the feet).

The sentences in lines [12-14] are illustrations of complex clauses. The sentence, **ngaqala ngangayinaka lento** (at first, I did not notice this) consists of a remote past indicative mood main clause, followed by a conjunction **ngoba** (because). This is then followed by a recent continuous past indicative mood complement clause **bengijwayele** (I did not notice) and an infinitive passive clause **ukuqaqanjelwa amathambo** (the pain), which in turn is followed by another conjunction **kodwa** (but) that introduces a further complement clause **lokhu sekuqala ukungisabisa manje** (it is starting to scare me). **Ngoba** (because) is the last conjunction that introduces a negative complement clause **angisalali** (I do not sleep) and an adverb of time **ebusuku** (at night). In sentence **kuthe emva kwezinyanga ezimbili** (after two months) found in lines [14-17], the main past tense indicative clause **kuthe** (I was told) includes an adverbial phrase of time **emva kwezinyanga** (after two months). It also consists of a relative clause **ezimbili** (which is two), which is followed by a remote past indicative mood and an adverb of place **ngavele ngaya emtholampilo** (I went to the clinic). This clause is then followed by the dependent mood **lapho** (when), which introduces a further complement relative clause **banginika khona amaphilisi amhlophe ezinhlungu** (they gave me white painkillers). The next complement clause **bangitshela** (they told me) is followed by the conjunction **ukuthi** (that) and participial mood **uma** (if), which introduces the subordinate clause **ziqhubeka izinhlungu** (it continues). The final complement subjunctive clause indicating purpose **kumele ngiye ukubona udokotela noma ngiye esibhedlela** (I must go to see the doctor or I must go to hospital) is followed by the conjunction **ukuze** (so that), which introduces the subordinate subjunction clause **benze i-X ray** (will do and X-ray). The last sentence in line 18 **ingakho ke ngilapha dokotela** (that is why I am here) is a simple clause.

It is evident from the above syntactic analysis that this introductory segment of the dialogue consists of many examples of sentences exhibiting a high complex structure. In terms of Foster et al's Analysis of Speech Unit Model (2000), discussed in Section 4.3, this segment predominantly consists of complex clauses, and therefore represents a higher level of syntactic complexity.

(i). The diagnostic phase of questioning, instructing and explaining***Cognitive complexity***

Lines [26-43] constitute the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's cognitive complexity model (2005).

During the **pre-examination phase** of the segment, the communication between the doctor and the patient is expressed by using the present tense, thereby illustrating the [+ here-and-now] variable. The reasoning demands of this segment are simple since the sentences do not consist of any logical subordinators to indicate causal reasoning, thus representing the [+ no reasoning] variable of the developmental complexity. There are few temporal and spatial locational references evident within this phase of the task. A few temporal references such as **ebusuku** (at night) occur in the sentence in line [29] and **kulezi zinsuku** (in these days) occurs in the sentence in line [30]. Spatial references occur in line [35], **kusemathanjeni nasemalungeni** (in the bones and joints). These features also indicate the [-few elements] feature of development complexity, thus representing a low level of developmental complexity.

Furthermore, this segment demonstrates a high performative level of complexity. During this segment of the dialogue, the doctor is required to perform multiple tasks simultaneously. The doctor has to listen attentively to the patient, draw on prior knowledge, rephrase or formulate more questions and reach a shared decision as to how to proceed. Moreover, these tasks will need to be performed by the doctor within a limited timeframe. Therefore, this segment represents the following performative complexity features, i.e. [- single task], [- prior knowledge] and [- planning]. With both the developmental and performative features taken into consideration, this phase represents the characteristics that fall predominately in category two according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and low developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The pre-examination segment is not as complex as the introductory phase as it places minimal communication demands on the participants. However, in terms of the SSARC Model (Robinson, 2010) (see discussion in Section 4.2.4), this conforms to as Step 2, whereby complexity can be increased on the resource-directing dimensions but decreased on the resource-dispersing dimensions. For instance, the participant in the role of the doctor could be provided prior knowledge [+prior

knowledge] in order to perform a single task [+single task] without planning time [-planning time] during the pre-examination phase task. The patient within this task could be limited to the use of spatial reference [+few elements].

Syntactic complexity at sentence and clausal levels

In this diagnostic phase of dialogue 1, lines [25-28] and [35-37] contain mostly simple mono-clausal sentences. These clauses are illustrations of simple questions and responses, as evident in lines [25], [27-28] and [36-37]. Therefore, it illustrates a low level of syntactic complexity, according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

However, sentences in lines [29-32] are syntactically complex. The sentence in line [29] begins with a present tense indicative main clause **amathambo aqaqamba kakhulu** (bones have severe pain), which contains an adverb of time **ebusuku** (at night). This is then followed by the conjunction **noma** (or) that introduces a participial mood clause **uma** (if), which is then followed by a relative complement clause **amanzi abandayo** (cold water). The conjunction **njengoba** (because) introduces the complement clause **kubanda nje** (it is just cold) that comprises a locative and demonstrative **kulezi zinsuku** (these days) followed by a negative present indicative clause including an adverbial phrase of time **angilali ebusuku** (I do not sleep).

The sentence in lines [33-34] **kungabe kukhona okunye okuzwayo ngaphandle kokuqaqamba kwamathambo** (is there any pain you feel other than the pain from the bones) is considered syntactically complex. The main question clause **kungabe kukhona okunye okuzwayo** (is there any pain that you feel) consists of a relative clause followed by an adverbial phrase of place **ngaphandle kokuqaqamba** (other than the pain) and a locative phrase **kwathambo** (from the bones). The sentence in line [38] contains a main past tense passive clause **yebo yenziwa** (yes I did), followed by the conjunction **kodwa** (but), which introduces a negative subordinate relative clause **bangitshela into engingayizwa kahle** (I did not understand their explanation).

The sentence in line [40] the doctor requests to conduct a physical examination of the patient. The sentence begins with a subjunctive clause **ngicela ungivumele ngikuhlole** (please allow me to check) followed by a dependent clause **lapho uzwa khona ubuhlungu** (where you feel pain). This is then followed by the future continuous tense **sizobe sesibheka i-X-ray yakho** (we will look at your X-ray). The conjunction **bese** (and then), then introduces the complement clause **siyakhuluma** (we talk),

which is then followed by a further conjunction in the future **ukuthi sizoqhubeka kanjani** (about how to proceed).

It is evident from the above syntactic analysis; this phase of the dialogue consists of several examples of sentences exhibiting a high complex sentence. In terms of Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter, this segment, which mostly consists of complex clauses, will therefore represent a higher level of syntactic complexity.

(ii). The directive phase

Cognitive complexity

Lines [44 – 46] represent the closing session of the consultation, which is analysed in terms of cognitive complexity.

In this segment, all sentences are expressed in the present tense illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing variable. In addition, there are no causal reasoning [+no reasoning] nor is there any spatial references [+ few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a high level of performative complexity. Lines [45] and [46] express gratitude, thus denoting just a single task needed to be carried out [+ single task]. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. No planning is required during this phase [- planning]. In terms of Robinson's Triadic Componential Framework (2005), this phase is an example of a low-level segment of performative complexity. Therefore, it can be deduced that this phase falls into category two, which is associated with low developmental and high performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in this directive phase is simple along the resource-directing dimensions since it requires the participant to narrate events in the present tense and no element of reasoning and no information on locational or spatial references are provided. However, along the resource-dispersing dimensions, the

task could be provided with planning time [+planning time] and prior knowledge [+prior knowledge] according to the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic Complexity at sentence and clausal levels

Lines [44- 46] of this segment of the dialogue exemplify simple mono-clausal sentences. Thus, in terms of Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter, this segment, which predominantly contains simple clauses, will therefore represent a lower level of syntactic complexity.

Syntactic complexity at phrasal level for task one

In this dialogue, several examples of noun phrases (NP's) containing nominal modifiers that include adjectives, numerals, quantifiers ('all/whole'), enumerative ('which'/ 'what kind/type'), demonstratives, emphatic pronoun, nominal and clausal relatives, semantic and descriptive possessives are evident (Poulus & Msimang, 1998). A few selected examples of these NP's are described hereafter. The NP's in lines [11] and [16] include relative clauses used with numerals, **senginezinyanga eziyisithupha** (it has been six months) in line [11] and **kwezinyanga ezimbili** (two months) in line [16]. The noun phrase **lawa asemalungeni ezandla** (in these joints of my hands) in line [12] consists of a demonstrative **lawa** (these) and a possessive phrase **amalungeni ezandla** (in the joints of the hands). Line [16] includes the noun phrase **amaphilisi amhlophe ezinhlungu** (white painkillers), which consists of lexical head **amaphilisi** (pills) followed by an adjective **amhlophe** (white) and then a descriptive possessive phrase **ezinhlungu** (of pain). Noun phrases **amanzi abandayo** (cold water) in lines [29-30] is an example of a relative clause whereas the noun phrase introduced by the preposition **ku-** in **kulezi zinsuku** (in these days) in line [30] includes a demonstrative **lezi** (these).

In terms of the noun phrases described above, these are categorized as complex noun phrases because they consist of a lexical head with a modifier (i.e. prepositional, adjectival, relative clauses and demonstratives) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) discussed in section 4.3.1.

4.5.2 Task descriptor 2

Ungudokotela osemsebenzini ngesikhathi kufika kukaMaKhumalo efika ezobona udokotela ngoba sekuphele isonto engazizwa kahle. UMaKhumalo uneminyaka engama 45 ubudala. Kungokokuqala ezobona udokotela ngenxa yezinhlungu esiswini nasesifubeni. Mbingelele bese umbuza ngomlando

wakhe, bese umbuza imininingwane yakhe ngqo. Ube sewuqhubeka umbuze ukuthi unayiphi inkinga. Mcele ukuthi achaze isimo sakhe futhi umbuze ukuthi akanazo yini ezinye izinkinga. Kuzodingeka ukuthi umtshela ukuthi kuzofanele axilongwe nge-endoscope. Qedela ingxoxo yakho ngendlela efanele.

You are a doctor on duty at the local hospital where MaKhumalo had come to see a doctor because it has been a week she is not feeling well. MaKhumalo is 45 years old. It is the first time she came to see the doctor because of pain in the stomach and in the chest. Greet the patient and conduct a full history taking, asking the patient her personal details. You then proceed to ask her what is the matter with her. Ask the patient to describe her condition and if she has any other complaints. You will need to tell the patient that she would have to conduct an endoscopy procedure. Conclude your interview appropriately.

4.5.2.1 Dialogue 2

D = Doctor

P = Patient

[Language functions]

- D: Sawubona Ma! (*Hello Mam!*) (1)
[Greeting]
- P: Yebo, sawubona dokotela. (*Hello doctor*) (2)
[Response to greeting]
- D: Yebo mama, unghlala phansi. (*Hello, you can sit down*) (3)
[Giving instruction to patient]
- P: Ngiyabonga dokotela. (*Thank you doctor - uhlala phansi uqeda uphefumulela phezulu - she is sitting down and she is breathing fast*) (5)
[Expressing gratitude]
- D: Ngicela igama nesibongo sakho. (*Please can I ask your name and surname*)
[Permission to ask name and surname]
- P: NginguNontombi wakwaKhumalo. (*I am Nontombi Khumalo*) (7)
[Giving name and surname]
- D: Uneminyaka emingaki? (*How old are you?*) (8)
[Asking for age]
- P: Ngineminyaka engamashumi amane nanhlanu. (*I am 45 years old*) (9)
[Giving age]

- D: Uphethwe yini namhlanje? (*What is wrong today?*) (10)
[Identifying reason for consultation]
- P: Ey dokotela kubuhlungu esifubeni nasesiswini. (*Ey, Doctor I have pain in my chest and stomach*) (12)
[Explanation of problem]
- D: Ubuhlungu bakhona bunjani? (*Describe the pain?*) (13)
[Enquiry into pain]
- P: Kubuhlungu lokhu okushisayo, ikakhulukazi uma ngilambile, kuba sengathi kunento engihambayo esiswini. (*A burning pain, especially when I am hungry, it is as if something is moving in my stomach.*) (16)
[Description of current pain and discomfort]
- D: Kuqale nini? (*When did it start?*) (17)
[Enquiry into onset of problem]
- P: Sekuphele iviki impela kungiphethe, angisakwazi ukubekezela. Kubuye kunyamalale ngolunye usuku kuphinde kubuye futhi. (*It has been a week since it started, I cannot take it anymore. Sometimes the pain disappears, another day it comes back.*) (21)
[Narration of problem]
- D: Kubonakala engathi unezilonda emathunjini okubiza ngokuthi ama-ulcers mama. Udla upelepele kakhulu noma iziphuzo ezine-acid na? (*It looks like you have sores in your intestines and we call them ulcers. Do you eat a lot of pepper? Do you drink acid containing drinks?*) (25)
[Follow-up questions]
- P: Wona upelepele ngiyawuthanda dokotela ngihlezi ngiwudla nazo ke nalezi ziphuzo zakhona ama-coca-cola. (*Yes, I like pepper doctor and I always eat it and these drinks like coca-cola.*) (28)
[Response to enquiry]
- D: Okwamanje ngizokunikeza amaphilisi nomuthi wokudambisa izinhlungu, kodwa kuzomele uye esibhedlela uyokwenza okunye ukuhlolwa okufaka ipayipi emlonyeni, ebizwa nge-endoscope ukuze sibone kahle ukuthi lezi zilonda zinjani. (Esho ebe embhalela incwadi yasesibhedlela). (*I will give you painkillers and syrup but you have to go to hospital to do a type of test which places a tube down your mouth, that is called an endoscope so that we can see how these sores are (as he was writing for her the letter for hospital).*) (35)

[Indicates medication to be prescribed]; [Instructions to go for an endoscopy procedure]; [Explanation of procedure]

P: Manje bazongilalisa yini dokotela? (*So doctor will I be admitted?*) (36)

[Enquiry into admission to hospital]

D: Cha uzokwenza nje bese uyabuya ngeke baze bakulalise. (*No, they will do that checkup after you finish, you will come back, and you will not be admitted.*) (38)

[Explanation of problem]; [Response to hospital admission]

P: Ngiyabonga usale kahle (*Thank you stay well.*) (39)

[Expressing gratitude]

D: Uhambe kahle, ubuye la kumina uma usuyile ukuyokwenza i-endoscopy leyo. (*Go well; come back here to me when you have done that endoscopy.*) (41)

[Instruction to return after procedure is complete]

P: Kulungile ke, sizobonana. (*Okay, I will see you.*) (42)

[Agreement]

4.5.2.2 Task Complexity

Task typology –interactional complexity

The task described in dialogue 2 is mainly an information gap task in terms of the task typology proposed by Pica et al. (1993). One participant holds the information that is unknown to the other participant. In order to complete the task, information is required from the other participant. In lines 9-38, participant X (patient) holds the information that is unknown to the other participant Y (doctor). According to Table 2-1 (see section 2.3.4.4 in Chapter 2), the features of this task configure towards a two-way flow of information and corresponds to interactant relationship 1b and interactant requirement 2b. Both participants (doctor and patient) work toward a convergent goal and a single outcome. The doctor and the patient want to obtain all the relevant information that they both do not know, i.e. the doctor needs to know how to proceed with the stomach pain and the patient needs to know what is causing the pain and if she will be admitted to the hospital. Therefore, they are also relating to the descriptions of goal orientations 3a and outcome option 4a in Table 2-1. In order to reach the convergent goal (+) and the single outcome (1) of the task, interaction is required (+), according to Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2).

This dialogue can also be considered a decision-making task. Based on the events described in the dialogue, the doctor and the patient must work together and choose the best way forward. Therefore,

interaction is required (+). There could be more than one outcome possible depending on the results of the endoscopy as described in lines [28-41].

(i). The introductory phase

Cognitive complexity

Lines [1- 5] constitute the introductory phase or the initiating the session phase. These sentences are analysed by virtue of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimensions.

The communication that takes place between the doctor and patient in lines [1-15] is conveyed using the present tense. Thus, representing the [+ here-and-now] feature of Robinson's developmental complexity. Moreover, these sentences contain no causal reasoning, thus representing the [+ no reasoning] feature, as well as the [+ few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a low-level segment of developmental complexity.

This segment does not represent a single task example as it contains the task of greeting, instructing the patient to sit and requesting permission to ask questions. However, the content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- single task], [- planning] and [- prior knowledge] along the resource dispersing dimension of Robinson's Cognition Hypothesis, which illustrates a high level of performative complexity and low developmental complexity. Thus, this phase exhibits features that fall in category two according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework based (2005) on his Cognition Hypothesis illustrating a high performative and low developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the introductory phase is simple to perform along the resource-directing variables in that it requires the participant, in the role of the patient, to describe events in the present tense. Neither causal reasoning nor few elements are provided. However, the task can be descaled along the resource dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform only a single task [+

single task]. This descaling process of the task conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

Lines [1-5] of this introductory segment of the dialogue exemplifies predominantly simple mono-clausal sentences. These clauses consist of simple questions and answers as evident in lines [3 -5]. Apart from the clause **ungahlala phansi** (you can sit down), which contains a verb with the potential morpheme **-nga-** (can), which conveys the meaning “can”. Thus, according to Foster et al’s Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter, this segment represents a lower level of syntactic complexity.

(ii). The diagnostic phase of questioning, instructing and explaining

Cognitive complexity

Lines [6-38] constitute the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson’s cognitive complexity model (2005).

The segment, which contains sentences [6 -27] represent the **pre-examination phase** of the consultation. The sentence in line [17] begins with the doctor asking the patient when did the problem start, thereby using the simple past tense, denoting the [+ there-and-then] dimension. The patient explains and narrates the happenings in the past. Therefore, it represents the [+there-and-then] variable of developmental complexity. Sentences in lines [18 – 27] are all expressed in the present tense this representing the [+here-and-now] variable of the developmental complexity. There is evidence in sentence of line [21] that suggests causal reasoning as the doctor suspects what lead to the discomfort the patient is experiencing now. The patient confirms this suspicion in the sentence in line [25]. This represents the [-no reasoning] variable of the developmental complexity. There are several temporal and spatial locational references evident within this segment of the dialogue. Temporal references are evident in the sentence in line [18] **sekuphele iviki** (it has been a week) and in sentence of line [19] **ngolunye usuku** (on the other day). Spatial references occur in the sentence in line [22], **emathunjini** (in the intestines), **esibhedlela** (to hospital), in sentence of line [30] and **emlonyeni** (in your mouth) in sentence of line [31]. These features also indicate the [-few elements] feature of development complexity, thus representing a high level of developmental complexity.

This segment describes a high level of complexity since the medical doctor is required to perform the twofold task of listening and planning simultaneously. The patient is seemingly very quick in her response, thereby, leaving the doctor with a limited timeframe for planning. Therefore, this segment represents the following high level of performative complexity features, i.e. [- single task] and [- planning]. Moreover, the feature of [- prior knowledge] is exhibited when the doctor uses professional expertise to explain the endoscopy procedure to the patient. With both the developmental and performative features taken into consideration, this phase represents the characteristics that fall predominantly in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high developmental and high performative complexity on the part of the doctor.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The pre-examination phase consists of a complex task as it places greater communication demands on the participants. The task requires the participants to narrate events that happened in the past, at different places and times. It also requires participants to perform multiple tasks with no prior knowledge or planning time provided. In order to descale this task, according to the SSARC model, the participant in the role as the doctor could be given planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. In addition, the participant in the role as the patient could be required to avoid or limit causal reasoning [+no reasoning], describe the presenting complaint in the present tense [+here-and-now] as well as limit the location or spatial references [+few elements]. This task too, conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic Complexity at sentence and clausal level

Lines [6-13], [17], [26 – 27] and [36] consist of simple mono-clausal questions and answers relating to the reason for the patient's visit. Thus, in terms of Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3, this segment represents a lower level of syntactic complexity.

However, the sentence in line [14] is an example of a complex clause. The main indicative clause **kubuhlungu lokhu** (it is a pain) is followed by a relative clause **okushisayo** (that is burning), which is followed by a participial situative mood clause **uma ngilambile** (when I am hungry). A further copular verb clause **kuba** (it becomes) introduces a subordinate relative clause **sengathi kunento engihambayo esiswini** (as if something is moving in the stomach). In the sentence, **kuba sengathi kunento engihambayo esiswini**, the word **esiswini** ("in the stomach") is an adverb of place.

The sentences in lines [18-19] are also examples of complex clauses. The sentence in line [18] consists of a past tense main clause **sekuphele iviki impela kungiphethe** (it has been a week since it started), followed by a negative clause **angisakwazi** (I cannot) and then by an infinitive complement clause **ukubekezela** (take it anymore). The sentence in line [19] begins with the principal clause **kubuye kunyamalale** (sometimes it disappears) followed by an instrumentive adjunct phrase **ngolunye usuku** (on the other day), which is then further followed by a subjunctive subordinate clause **kuphinde kubuye futhi** (it comes back).

The sentence in line [22] consists of the main clause **kubonakala engathi unezilonda emathunjini** (it looks like you have sores in your intestines), which is then followed by a relative clause **okubiza ngokuthi ama-ulcers mama** (which are called ulcers). The sentence thereafter in line [23] begins with a simple main clause **udla upelepele kakhulu** (do you eat a lot of pepper) and is then followed by the conjunction **noma** (or). This is then followed by a subordinate clause containing an associative copulative clause in **iziphuzo ezine-acid na** (drink acid containing drinks).

The sentence in line [29] **okwamanje ngizokunikeza amaphilisi nomuthi wokudambisa izinhlungu, kodwa kuzomele uye esibhedlela uyokwenza okunye ukuhlolwa okufaka ipayipi emlonyeni, ebizwa nge-endoscope ukuze sibone kahle ukuthi lezi zilonda zinjani** (I will give you the painkillers and syrup but you have to go to hospital to do a type of test, which places a tube down your mouth, that is called an endoscope so that we can see how these sores are), is recognized as complex. This sentence contains five clauses, of which the principal clause is a future tense indicative mood **okwamanje ngizokunikeza amaphilisi nomuthi wokudambisa izinhlungu** (I will give you painkillers and syrup). This sentence also contains an associative copulative clause **nomuthi** (and medication) followed by a subordinate possessive clause **wokudambisa izinhlungu** (those that ease the pain). It is followed by an indicative complement clause, introduced by **kodwa** (but), with the verb **kuzomele** (you have to) taking a subjunctive mood **uye** (go). This is then followed by a complement relative mood clause **uyokwenza okunye ukuhlolwa okufaka ipayipi emlonyeni** (do a type of test, which places a tube down your mouth). The degree of syntactic complexity is illustrated in the use of the passive indicative clause in **ukuhlolwa** (a test) followed by another relative phrase **okufaka ipayipi** (which places a pipe) and a locative adjunct phrase **emlonyeni** (in the mouth). A further complement clause is introduced by a relative clause **ebizwa** (which is called), and an instrumentive adjunct phrase **nge-endoscope** (endoscope). It is then followed by a subordinate clause introduced by the conjunction **ukuze** (so that), with the verb **sibone** (we can see) in a subjunctive mood and then by another conjunction **ukuthi** (that) with a complement clause consisting of a demonstrative **lezi zilonda**

(these sores). The sentence in line [37] contains a future tense indicative mood main clause **cha uzokwenza nje** (you will do just that). This clause is then followed by the deficient verb conjunction **bese** (and then) that introduces the present tense indicative mood **uyabuya** (you will come back) and then followed by a deficient verb **ngeke** (will not), which introduces a subjunctive mood complement **baze bakulalise** (be admitted).

The examples described above consist of complex and compound sentences, thereby exhibiting a higher level of syntactic complexity. Therefore, in terms of Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3, this segment represents a higher level of syntactic complexity.

(iii). The directive phase

Cognitive complexity

Lines [39 – 42] represent the closing session of the consultation, which is analysed in terms of Robinson's (2005) cognitive complexity model.

In this segment, all sentences are expressed in the present tense illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing variable. In addition, there are no causal reasoning [+no reasoning] and one example of spatial reference in the sentence in line [41], **kumina** (to me) [+ few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a low level of performative complexity. Here, the doctor need only to perform a single task of informing the patient to return after the procedure, thus denoting [+ single task]. This directive is illustrated in sentence [40] and is familiar to the doctor hence it does not require much planning time on the doctor's part [- planning]. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. By virtue of Robinson's Triadic Componential Framework (2005), this phase is an example of a low-level segment of performative complexity. Therefore, this phase exhibits features of category two, which is related with low developmental and high performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in this phase is simple to perform along the resource-directing variables in that it requires the participant, in the role of the patient, to describe events in the present tense. Neither causal reasoning nor few elements are provided. However, the task can be descaled along the resource dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] by virtue of Robinson's SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this segment, the sentences occur as simple, expressing either an agreement or gratitude. The sentence in line [40], however, begins with a present tense indicative main clause followed by a subordinate subjunctive clause **ubuye la** (come back), which also consists of a locative adjunct phrase **kumina** (to me). This is further followed by the conjunction **uma** (when) that introduces a complement infinitive mood clause **ukuyokwenza i-endoscopy leyo** (you have done that endoscope).

Therefore, in terms of Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter, this segment represents a lower level of syntactic complexity.

Syntactic complexity at phrasal level for task two

This dialogue consists of several examples of NPs that contain nominal modifiers such as demonstratives and nominal and clausal relatives. Examples of NPs consisting of lexical heads and relatives are evident in lines [8-9] and [30-31]. The noun phrase **uneminyaka emingaki** (How old are you) and **ngineminyaka engamashumi amane nanhlanu** (I am 45 years old) in lines [8-9] are examples of nominal relatives. Additional examples of NPs consisting of a clausal relative is evident in line [15] **kunento engihambayo esiswini** (something that is moving in the stomach) and a nominal relative in line [23] **iziphuzo ezine-acid** (drinks that contain acid). The noun phrases **nalezi ziphuzo zakhona ama-coca-cola** (these drinks like coca-cola) in line [28], **lezi zilonda zinjani** (see how these sores are) in line [31] and **i-endoscopy leyo** (that endoscopy) in line [31] are examples of phrases consisting of demonstratives **lezi** and **leyo** in lines [23,28 and 31] respectively.

In terms of the noun phrases described above, these are realised as complex as the noun phrases consist of a lexical head with a modifier (i.e. relative and demonstrative clauses) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) which has been discussed in section 4.3.1.

4.5.3 Task descriptor 3

Umama ufika esibhedlela nengane yakhe yentombazane eneminyaka eyi-15 ubudala. Ingane yakhe yentombazane izwa ubuhlungu obukhulu esiswini sayo, futhi iyaphalaza kanti futhi ayilalanga ebusuku. Ungudokotela osemsebenzini ngesikhathi sokufika kwengane esibhedlela. Bingelela umama bese ubabuza ukuthi ungabasiza kanjani. Thola umlando wakhe, bese umbuza imininingwane yakhe ngqo. Mcele ukuthi achaze ngokwenaba isimo sakhe. Mtshela ukuthi uzomhlola izinga lokushisa. Uzobe sewumtshela ukuthi kuzofanele ahlinzwe ngoba uguliswa yi-appendix. Qedela ingxoxo yakho ngendlela efanele.

A mother arrives at the hospital with her 15-year-old daughter. The daughter is experiencing extreme pain in her stomach. She is also vomiting, and she did not sleep at night. You are the medical doctor on duty at the hospital. Greet the mother and the patient and ask them how you can assist them. Conduct a full history taking, asking the patient her personal details. Ask the patient to explain her condition in detail. Tell the patient that you will be checking her temperature. You will then need to tell the patient that she would have to undergo an operation because she is suffering from appendicitis. Conclude your interview appropriately.

4.5.3.1 Dialogue 3

D = Doctor

P = Patient

[Language functions]

- D: Sanibona mama nginganisiza ngani? (Hallo, how *can I help you*)? (1)
[Greeting]; [Offer assistance]
- P: Yebo dokotela, ingane yami iyagula ayikaze ibuthi quthu ubuthongo. (*Hello doctor, my child is sick and she did not sleep at all*). (3)
[Response to greeting]; [Explanation of problem]
- D: (Ubuza ingane), Kwenzenjani sisi? (*The doctor is asking the child*), what is happening? [Follow-up questions]
- P: Kubuhlungu esiswini futhi ngiyaphalaza. (*I have pain in my stomach and I am vomiting*). (7)
[Expressing additional problems]
- D: Ungubani igama nesibongo sakho kanye neminyaka? (*What is your name, surname and your age please*)? (9)
[Asking name, surname and age]

- P: NginguNozipho wakwaNkosi. Ngineminyaka eyishumi nanhlanu. (*I am Nozipho Nkosi. I am 15 years old.*) (11)
[Giving name, surname and age]
- D: Ziqale nini izinhlungu nokuphalaza mawakhe. Ngicela ungichazele ukusuka nokuhlala kokugula. (*When did the pain start and the vomiting. Please explain the root of the illness to me.*) (14)
[Asking onset of problem]; [Requesting further elaboration]
- P: Kuqale izolo ebusuku. Kubuhlungu esiswini ngasenkabeni futhi nokudla angikuthandi. Hhayi silale izintathakusa, sesizolala ngathi sekubuhlungu nasesinyeni ngasekwesokudla kwami. Ngaqala nokuphalaza ngaso lesi sikhathi. (*It started yesterday at night. I have pain in the stomach near the navel and I even have loss of appetite. We slept early in the morning; the time we were going to sleep, I said there is a pain in my lower abdomen in the right hand side. I started vomiting at that time.*) (21)
[Narrating the problem]
- D: Akakhulelwe sisi? (*Are you not pregnant?*) (22)
[Enquiry into possible pregnancy]
- P: Cha, angikhulelwe ngisayitshitshi dokotela. (*No doctor, I am not pregnant; I am still a virgin.*) (24)
[Response to question]
- D: Kulungile ngizobheka ukushisa kwakho, esho ethatha okokuhlola ukushisa, phakamisa ikhwapha-ke sibheke ukushisa. (*It is fine I will check your temperature, please move up your arm I want to check temperature.*) (27)
[Instruction to move up the arm for checking of temperature]
- P: Akalalanga dokotela umntwana wami ngenxa yezinhlungu (*She did not sleep doctor because of pain.*) (29)
[Supplying additional information]
- D: Hmm! Uyashisa bhe, ukushisa kwakhe kuthi 37.5, kuzomele ayokwenza i-ultrasound ngokushesha ngoba kuzodingeka ukuthi simhlinze kungekudala. Ngizomthatha negazi. (*Hmm! Her temperature is high, her temperature is 37.5, she must quickly do an ultrasound because it is required that we do the operation fast. I will also take her blood sample.*) (34)
[Informing patient that she will have to do an ultrasound]; [Informing patient that she will need to undergo an operation]; [Informing patient that she will have to do a blood test]

- P: Kubi kakhulu yini dokotela? Esho ngokuthuka (*Is it too bad doctor? (Saying with fear).*
[Enquiry into severity of the problem]
- D: Cha kuzolunga mama uma sisheshe simhlinza ngoba uphethwe yilento okuthiwa i-appendicitis kodwa kumele silinde le miphumela yaloku kuhlola esesikwenzile ukuze siqinisekise ukuthi yiyona ngampela bese siyamhlinza-ke. Abize umhlengikazi ukuba beze nombhede khona bezohambisa ngawo isiguli kwi- ultrasound. (*No everything will be fine if we quickly proceed with the operation because she is suffering with appendicitis but we have to wait for the results of the test so that we can confirm it and thereafter we are going to do the operation. The doctor called the nurse to come with the bed to take the patient to ultrasound.*) (45)
[Reassuring the patient and parent]; [Explanation of procedure to follow]; [Instruction to the nurse]
- P: Thula uyamuzwa udokotela uthi uzoba ngcono (*Do not cry the doctor is saying you are going to be fine.*) (47)
[Parent reassuring child]
- D: Uma niqeda nje nize lapha kimi ngizobona imiphumela. (*When you are done there come back to me so that I can see the results.*) (49)
[Instructing patient to return after the ultrasound]
- P: Yebo dokotela (besho bephuma nomhlengikazi ogquba ingane). (*Yes doctor as they are going with the nurse who is pushing the bed.*) (51)
[Agreement]

4.5.3.2 Task Complexity

Task typology – interactional complexity

The task described in dialogue 3 is predominantly an information gap task. One participant (patient) holds the information that is not already known to the other participant (doctor) but needs to know for task completion. In lines 4-24, participant X (patient) holds the information that is unknown to the other participant Y (doctor). According to Table 2-1, the features of this task configure towards a possible two-way flow of information (X=Y) and it corresponds to interactant relationship 1b and interactant requirement 2b. Both participants (doctor and the patient) work toward a convergent goal and a single outcome. The doctor and the patient want to obtain all the relevant information that they both do not know, i.e. the doctor needs to know what is causing the vomiting and stomach pains and the patient needs to know the seriousness of the condition. Therefore, they are also relating to the descriptions of goal orientations 3a and outcome option 4a in Table 2-1. In order to reach the

convergent goal (+) and the single outcome (1) of the task, interaction is required (+), according to Table 2-2 (Pica et al., 1993).

This dialogue is also a decision-making task. In lines [35-45] of the dialogue, the doctor is dominating in reaching a decision. Therefore, interaction is required (+). There could be more than one outcome possible depending on the results of the ultrasound as described in lines [37-41].

(i). The introductory phase

Cognitive complexity

Lines [1- 11] constitute the introductory phase or the initiating the session phase. These sentences are analysed by virtue of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity model.

The communication that takes place between the doctor and patient/mother in lines [1-11] is conveyed using the present tense, except in sentence of line [2]. Thus, representing the [- here-and-now] feature of Robinson's developmental complexity. Moreover, these sentences contain no causal reasoning, thus representing the [+ no reasoning] variable, as well as the [+ few elements] variable of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a low-level segment of developmental complexity.

This segment does not represent a single task example. In this segment, the doctor has to greet both the mother and the child, ask the child what is happening with her and request personal information. However, the content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- single task], [- planning] and [- prior knowledge] along the resource dispersing variable of Robinson's Cognition Hypothesis, which illustrates a high level of performative complexity and low developmental complexity. Thus, this phase exhibits features that fall in category two according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and low developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

In this phase, the task can be descaled by requiring the participant, in the role of the patient, to describe events in the present tense [+here-and-now]. Furthermore, the task can be made simpler along the resource dispersing dimensions. The conversation could for instance provide planning time [+ planning] and prior knowledge [+ prior knowledge] for the participant as the role of the doctor, to perform only a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this introductory segment of dialogue 3, lines [1], [2], [4], [6], [8], [10] comprise of mostly simple clauses, which express short mono-clausal questions and answers. There are very few instances of complex clauses evident in this phase. These include the complex sentence in line [2], which contains an idiomatic expression **ayikaze ibuthi quthu ubuthongo** (she did not sleep at all), as a complement clause. The sentence in line [6] consists of two clauses linked by the conjunction **futhi**. Line [8] is expressed as a question that comprises the associative copulative clause **na-** in **nesibongo** (and surname) and the conjunction **kanye** (and) with the associative copulative clause **na-** in **neminyaka** (age). A further use of the associative copulative clause **na-** is also expressed in the clause **ngineminyaka** (I have years) followed by a relative complement clause in **eyishumi nanhlanu** (which is 15) with an associative **na-** adjunct once more. This segment therefore, characterises a low level of syntactic complexity, in terms of Foster et al.'s Analysis of Speech Unit Model (2000).

(ii). The diagnostic phase of questioning, instructing and explaining

Cognitive complexity

Lines [12-45] constitute the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's (2005) cognitive complexity model.

In this segment, sentences in lines [12 -24] represent the **pre-examination phase** of the consultation. The sentence in line [12] begins with the doctor asking the patient when did the problem begin, thereby using the simple past tense, denoting the [+ there-and-then] dimension. The patient explains and narrates the happenings in the past. Therefore, it represents the [+there-and-then] variable of developmental complexity. The sentences of lines [15 – 21] are all expressed in the past tense this representing the [+ there-and-then] feature of the developmental complexity. There is no reasoning given in this segment, thus [+ no reasoning]. Several temporal and spatial locational references are

evident in this part of the segment. Temporal references, **izolo ebusuku** (yesterday at night) occurs in the sentence in line [15], **izintathakusa** (early in the morning) occurs in the sentence in line [16] and **ngaso leso sikhathi** (at that time) occurs in the sentence in line [17-18]. Spatial locational references occur in sentences of lines [6], [15] and [17] **esiswini** (in the stomach) and **ngasenkabeni** (near the navel) and **nasesinyeni** (in the lower abdomen) respectively. These elements therefore represent the [-few elements] feature of the developmental complexity. Therefore, this segment is an example of a high-level segment of developmental complexity, according to Robinson's Triadic Componential Framework (2005).

Furthermore, this phase of the dialogue is an example of a high level of performative complexity in that the doctor has to perform several tasks. The doctor has to listen to both the mother and the child simultaneously, draw on prior knowledge as well as formulate appropriate questions before communicating them to the patient. These represent the [-single tasks] feature of performative complexity. There is no time to plan on the part of the doctor, hence [-planning] feature is described. The doctor's professional expertise and knowledge of the current situation would suffice, therefore [-prior knowledge] feature of performative complexity would come into effect. By virtue of Robinson's Triadic Componential Framework (2005), this phase describes the properties characteristic of category four, namely high developmental and high performative complexity on the part of the doctor.

The **during-the-examination phase**, as indicated in sentences [25-27], entails the diagnostic instruction by the doctor. This communication takes place in the present tense, thus denoting the [+here-and-now] variable. There is no evidence of causal reasoning indicated. This segment represents the [+no reasoning] feature of the developmental complexity. There are no spatial or temporal references required, thereby indicating the [+few elements] feature of development complexity, thus representing a low level of developmental complexity.

This segment further describes the doctor having to perform multiple tasks simultaneously which indicates the [-single task] feature. These tasks include physically checking the patient's temperature, drawing on prior knowledge and formulating a diagnosis. The feature of [-prior knowledge] would be illustrated here as well as [+planning] since the doctor has the time to perform plan other tasks whilst examining the patient. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment describes features of category two, which is related with low developmental and high performative complexity.

The **post-examination phase** of the consultation is illustrated in sentences in lines [30-45]. Every sentence in this segment is depicted using the present tense, hence the [+here-and-now] feature of developmental complexity is invoked. There is sufficient evidence of causal reasoning occurring in sentences [31] and [37-40], with the use of the logical subordinators **ngoba**, **kuzodingeka ukuthi** (because it is required that) in sentence [31] and **uma** (if), **ukuze** (so that), **ukuba** (so that) in sentences [37-40] respectively. The feature of [-no reasoning] is depicted here. There is one example of locational reference evident in the sentence in line [41] **kwi-ultrasound** (to the ultrasound) in this segment, which describes the [-few elements] variable of developmental complexity. Therefore, the features depicted within this segment are linked to high-level developmental complexity.

Furthermore, this segment exhibits a high-level performative complexity in that it requires the doctor to perform multiple tasks of explaining the diagnosis to the patient and the procedure that is to follow. Also evident in this segment, is the doctor's professional expertise, which provides the relevant knowledge required to handle this situation. Consequently, a small amount of planning time is required from the doctor in order to proceed with the procedure. Hence, the following features relate to this segment, namely, [-single task], [- prior knowledge] and [- planning]. It follows, then that this phase falls into category four of Robinson's Triadic Componential Framework (2005) on the part of the doctor, which illustrates a high performative and high developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **pre-examination** segment requires participants to include elements of reasoning, narrate events that happened in the past as well as events that took place at different places and times, thus placing great demand on the participants. Prior knowledge and planning time are not provided to the participants. The participants are further expected to perform multiple tasks. According to the SSARC model (2010), this phase can be descaled on both the resource-directing and resource-dispersing variables. For example, the participant in the role as the doctor could be provided with prior knowledge and planning time [+ planning] [+ prior knowledge] to perform only a single task [+ single task]. In addition, the participant in the role as the patient could be required to exclude the use of reasoning [+no reasoning], describe the presenting complaint using the present tense [+here-and-now] as well as provide no or limited information on location or spatial references [+few elements]. This descaling process of the task could also conform to Step 1 of the SSARC model (2010) (see discussion in Section 4.2.4).

In the **during-the-examination phase**, the task is simple along the resource-directing phase. However, the task can be descaled along the resource-dispersing dimensions. This can be done for example the participant in the role of the doctor could be provided prior knowledge [+prior knowledge] in order to perform only a single task [+single task]. The **post-examination** segment contains a task that can be descaled by including no elements of reasoning [+no reasoning]. Furthermore, the task can be made simpler along the resource-dispersing dimensions. For instance, the task could provide planning time [+planning] and prior knowledge [+prior knowledge] for the participant as the role of the doctor, to perform only a single task [+single task]. This descaling process of the task conforms to as Step 2 of the SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This segment of the **pre-examination phase** contains a few simple clauses. Lines [15], [22], [23], [32] and [35] comprise of simple mono-clausal sentences. Sentences in line [15], **Kuqale izolo ebusuku** (it started yesterday at night) and lines [22-23] **Akakhulelwe sisi** (are you not pregnant) and **Cha, angikhulelwe ngisayitshitshi dokotela** (No, I am not pregnant; I am still virgin) are considered simple mono-clausal question and answer although they are expressed in the past tense and negative mood. The sentences in lines [32] and [35], **Ngizomthatha negazi** (I will also take her blood sample) and **Kubi kakhulu yini dokotela** (Is it too bad doctor) can also be classified as simple mono-clausal sentences.

However, this segment also comprises of sentences in lines [12-24] that display a considerable degree of syntactic complexity than the previous phase. Line [12] consists of sentences **Ziqale nini izinhlungu nokuphalaza mawakhe** (when did the pain and the vomiting start) is a complex sentence because it begins with a past tense indicative main clause **ziqale nini izinhlungu** (when did the pain start) followed by an associative copulative clause **na-** (and) and an infinitive complement clause **nokuphalaza** (and the vomiting). Another example of a complex clause, which contains an idiomatic expression, is evident in **Ngicela ungichazele ukusuka nokuhlala kokugula** (please explain to me the root of the illness). This complex clause starts with a present indicative mood clause followed by a subjunctive clause **ungichazele** (please explain to me) and then by an idiomatic clause **ukusuka nokuhlala kokugula** (the root of the illness).

Line [15] contains the sentence **Kubuhlungu esiswini ngasenkabeni futhi nokudla angikuthandi** (I have pain in my stomach near the navel and I even have loss of appetite) that is realized as a complex sentence. This sentence comprises of two independent clauses. The main clause contains a locative

esiswini (in my stomach) and then followed by an instrumental **nga-** in **ngasenkabeni** (near the navel) together with a locative. The sentence in line [16] **Hhayi silale izintathakusa, sesizolala ngathi sekubuhlungu nasesinyeni ngasekwesokudla kwami** (we slept early in the morning; the time we were going to sleep, I said there is a pain in my lower abdomen in the right hand side) comprises of three independent clauses. **Ngaqala nokuphalaza ngaso leso sikhathi** (I started vomiting at that time) is another example of a complex sentence that contains a past tense main clause followed by the associative copulative clause **na-** with an infinitive mood **nokuphalaza** (vomiting). This is then followed by an instrumental **nga-** adjunct phrase with a demonstrative in **ngaso leso sikhathi** (at that time). Taking into account the degree of syntactic complexity, this segment of the **pre-examination phase** illustrates a high level of syntactic complexity in terms of Foster et al.’s Analysis of Speech Unit Model (2000).

In the **during-the-examination phase**, the sentence in line [25] **Kulungile ngizobheka ukushisa kwakho, esho ethatha okokuhlola ukushisa, phakamisa ikhwapha-ke sibheke ukushisa** (It is fine I will check your temperature, please move up your arm I want to check temperature) is regarded as a compound sentence. These sentences are two independent clauses. The sentence **Kulungile ngizobheka ukushisa kwakho** (It is fine I will check your temperature) contains a future indicative main clause **ngizobheka** (I will check) followed by a possessive adjunct phrase **ukushisa kwakho** (your temperature). The last subordinate clause consists of an imperative mood main clause **phakamisa** (move up) followed by a subjunctive mood complement clause **sibheke** (check), to express a purpose clause. Therefore, this segment of the **during-the-examination phase** describes a high level of syntactic complexity in terms of Foster et al.’s Analysis of Speech Unit Model (2000).

Line [30] of the **post-examination phase** contains a complex sentence, **Hmm! Uyashisa bhe, ukushisa kwakhe kuthi 37.5, kuzomele ayokwenza i-ultrasound ngokushesha ngoba kuzodingeka ukuthi simhlinze kungekudala** (Hmm! Her temperature is high, her temperature is 37.5, and she must quickly do an ultrasound because we need to do the operation fast). It comprises of five clauses. It begins with a present indicative mood main clause **Uyashisa bhe** (her temperature is high) followed by a subjunctive mood **kuzomele** (she must). Then follows a clause featuring the conjunction **ngoba** (because) and another dependent subjunctive clause **kuzodingeka** (we need to do) using the conjunction **ukuthi** (that). This is then further complemented by a subjunctive clause **simhlinze** (we need to do the operation) and a negative adjective adjunct **kungekudala** (fast/immediately).

In sentences [37-39], the doctor reassures the patient that the situation is not serious and explains what is to follow. The sentence in line [37] begins with a future indicative mood main clause **Cha kuzolunga mama** (no everything will be fine), followed by the participial mood **uma** (if) and then the situative complement clause denoting a simultaneous action **sisheshe simhlinza** (quickly proceed with the operation). This is further complemented by the conjunction **ngoba** (because), which introduces a subordinate passive clause **uphethwe yilento okuthiwa i-appendicitis** (she is suffering with appendicitis) and another conjunction **kodwa** (but) followed by an independent subjunctive mood **kumele** (we must). Then follows a subordinate subjunctive clause **silinde le miphumela yaloku kuhlola esesikwenzile** (we wait for the results of the test), which consists of a demonstrative, a possessive and a relative past tense clause. The last clause of this sentence is introduced by the conjunction **ukuze** (so that), which follows a subjunctive clause **siqinisekise** (we can confirm) and then by another conjunction **ukuthi** (that) followed by an agentive absolute inflection clause **iyona ngampela** (it is really the appendicitis). Thereafter conjunction **bese** (and then) introduces a present indicative mood clause **siyamhlinza-ke** (we are going to do the operation).

This segment of the post-examination phase of this dialogue therefore, characterises a high level of syntactic complexity, in terms of Foster et al.'s Analysis of Speech Unit Model (2000).

(iii). The directive phase

Cognitive complexity

Lines [48 – 51] represent the closing session of the consultation, which are analysed in terms of cognitive complexity.

In this segment, all sentences are expressed in the present tense illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing variable. In addition, there are no causal reasoning [+no reasoning] and one example of spatial reference in the sentence in line [48], **kimi** (to me) [- few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a low level of performative complexity. In this segment, the doctor need only to perform a single task of informing the patient to return after the ultrasound procedure, thus denoting [+ single task]. This directive is illustrated in sentence of line [48] and is familiar to the doctor hence it does not require not much planning time on the doctor's part [- planning]. The doctor

and the patient need not draw on prior knowledge [- prior knowledge]. By virtue of Robinson's Triadic Componential Framework (2005), this phase is an example of a low-level segment of performative complexity. Therefore, this phase exhibits features of category two, which relates to low developmental and high performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

In the directive phase, the task is simple to perform along the resource-directing variable in that it requires the participant, in the role of the patient, to describe events in the present tense. Causal reasoning is not provided but just one additional element is given. However, the task can be descaled along the resource-dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge]. This descaling process of the task conforms to Step 3 of the SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this segment, the sentence in line [50] is recognized as a simple sentence expressing agreement. Line [48] is realized as a complex sentence comprising of three clauses. The principal clause of the sentence in line [48] starts with the conjunction **uma** (when), followed by the situative complement clause denoting a simultaneous action **nize lapha kimi** (come back to me). This is followed by the future indicative mood clause **ngizobona imiphumela** (I can see the results). Therefore, this segment demonstrates a high level of syntactic complexity, according to Foster et al.'s Analysis of Speech Unit Model (Foster et al., 2000).

Syntactic complexity at phrasal level for task three

In this dialogue, several examples of NPs containing modifiers such as semantic possessives, nominal relatives, and demonstratives are provided. These nominal modifiers contain lexical heads and semantic possessives, which are evident in lines [8], [17] and [25]. The noun phrase **nesibongo sakho** (your surname) in line [8], **ngasekwesokudla kwami** (on my right-hand side) in line [17] and **ukushisa kwakho** (your temperature) are examples of semantic possessives. The noun phrase **ngineminyaka eyishumi nanhlanu** (I am 15 years old) in line [10] is an example of a nominal relative with numerals. Nouns phrases containing examples of demonstratives are evident in lines [17] **leso sikhathi** (that time) and [37-38] **yilento** (it is this thing) and **le miphumela** (these results).

- P: Cha, akumina, ngilethe umntwana (*No, it is not me it is my child*). (5)
[Response to enquiry]
- D: Singanisiza ngani namhlanje mama? (*How can we help you today*)? (6)
[Offering assistance]
- P: Ngilethe umntwana namhlanje ngenxa yokuthi wayebonwe udokotela ngesonto elidlule wabe esethi asobuya ngomsombuluko ukuze aphinde asibone. (*Mother of child replies: I brought my child today because last week the doctor saw her and she said we must come back on Monday to see us again*). (11)
[Explanation of problem]
- D: Ubenani umntwana uze umlethe ngesonto eledlule? (*What did the child have when you brought her last week*)? (13)
[Further inquiry into problem]
- P: Wavale waphuma izilonda, zaphihlika umzimba wonke waze waphuma nezindlala emqaleni ezazibuhlungu. Uma evuka nje ekuseni impahla ayigqokile ibisuke isinamathele ezilondeni, kuze kulamule ukuthi simfake amanzi ukuze kuthambe bese eyakhumula ke. (*She had sores all over her body and her glands were painful. When she wakes up in the morning her clothes are stuck to the sores until we put her in water to make it soft after that she will take off the clothes*). (20)
[Description of the actual problem]
- D: Ngicela ungiophe ikhadi lomntwana, kukhona abamnika kona umntwana? (*Please give me the card of the child, is there anything they gave her*)? (22)
[Requesting child's clinic card], [Enquiry concerning treatment given at previous visit]
- P: Yebo, udokotela wamjova bese wamnika umuthi wokuthi simgcobe. (*Yes, they gave her an injection and treatment to apply*). (24)
[Response to treatment]
- D: Ziyaqala ukumphatha izilonda? (*Is it the first time she has these sores*)? (25)
[Further inquiry regarding the problem]
- P: Yebo ziyaqala. (*Mother of child replies: Yes, it is the first time*). (26)
[Provision of answer]
- D: Ingabe ikhona okunye okuvelile emva kokuba ethole imithi? (*Is there anything that you have noticed after she received the medication*)? (28)
[Enquiry regarding medication]

- P: Cha akukho, usengcono kakhulu yena ngoba nakhu nezindlala azisekho futhi izilonda azisagxizi amanzi. *(No, she is better now because there are no glands and there is no fluid coming out from the sores).*
 [Explanation on the use of medication]
- D: Usakhona umuthi owanele wokuthi agcobe izilonda? *(Is the ointment enough to apply for the sores)?* (33)
 [Enquiry regarding medication supply]
- P: Usasekhona wona kodwa usuyaphela *(We still have some but it will not be enough).*
 [Response to question]
- D: Kumele niqiniseke ukuthi umntwana akadlali esihlabathini isikhathi esiningi noma edlale khona ageze, engalali engagezanga. Okuphephile futhi okungcono ukuthi adlale otshanini noma kuvelanda ngoba kungenzeka ukuthi uzithathe lapho izilonda. *(You have to make sure that the child does not play too much in the sand even when she does play she must bath, she must not sleep without bathing. It is safe to play on the grass or in the veranda because it could be possible that she got an infection from there).* (42)
 [Recommendation concerning hygiene of child], [Possible cause of problem]
- P: Ngiyezwa dokotela *(I understand doctor).* (43)
 [Agreement]
- D: Kungabe kukhona ofisa ukukubuza noma okukukhathazayo *(Is there anything you want to ask or something that is troubling you).* (45)
 [Enquiry into any further problem]
- P: Cha, uma ezophila ziphele nezilonda. *(No, if she is going to be fine and sores have healed).* (47)
 [Confirmation if sores will heal]
- D: Kanti khululeka mama, uma uzokwenza njengoba uyalelwe udokotela uzophila kanti futhi uma kukhona okuvelayo ungabuya. *(You can relax, if you are going to do as I have told you she is going to be fine but if something comes up you must comeback).*
 [Reassuring patient]
- P: Siyabonga dokotela. *(Thank you doctor).* (52)
 [Expressing gratitude]
- D: Kubonga mina, senizodlula ewindini nithathe umuthi wokugcoba. *(Thank you too, please pass by the 'window' for the ointment).* (54)
 [Expressing gratitude], [Instruction to go to the pharmacy to collect medication]
- P: Usale kahle *(Stay well).* (55)

[Greeting]

D: Nihambe kahle naye abe gcono umntwana. (*Go well. Hope the child gets well*).

[Greeting]

**The pharmacy usually dispenses medicine through a ‘window’.

4.5.4.2 Task complexity

Task typology – interactional complexity

Dialogue 4 can be classified as mainly an information gap task according to Pica et al.’s (1993) task typology. One of the participants holds all the information that is unknown to the other person. Lines [4-35] describe one participant X (parent of patient) holds the information that is not already known to the other participant Y (the doctor). In lines [36-51], one participant X (doctor) holds the information unknown to the other participant Y (parent of patient).

This task involves a two-way flow of information (X=Y). The features in this task meet the conditions for interactant relationship 1b and interactional requirement 2b according to Table 2-1 (see section 2.3.4.4 in Chapter 2). Both participants’ (doctor and parent of the patient) goal orientation is convergent, namely, they both want to gather as much information as possible about the child’s health in order that she recovers from the sores. Only one option is possible and that is the child recovers. In order to reach a convergent goal (+) and a single outcome (1) of the task, interaction is required (+), according to Pica et al. (1993).

This dialogue can also be an example of a problem-solving task [lines 36-51]. With this task, the participants start out with shared access to information required for completion of the task. Therefore, this corresponds to interactant relationship 1c and interaction requirement 2c of Table 2-1 (see section 2.3.4.4 in Chapter 2).

In terms of Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2), a two-way exchange of this information is possible (X=Y). However, interaction may not be necessary (-) for participants to carry out the task, as one participant can work independently using the information to solve the problem, i.e. to ensure that the child recovers from the sores. In this particular scenario, both participants (the doctor and the parent of the child) are engaging in a two-way exchange of information. They are interacting in order to complete a task, i.e. to solve the problem of the child. Both participants work toward a convergent goal, namely for the recovering of the child and a single outcome, i.e. the medication helps

remove the sores. Therefore, it also meets the conditions of goal orientation 3a and outcome option 4a in Table 2-1 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2).

(i). The introductory phase

Cognitive complexity

Lines [1- 11] constitute the introductory phase or the initiating the session phase. These sentences are analysed in terms of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimension.

The communication that takes place between the doctor and the mother of the child in lines [1-11] is represented using the present tense, except in lines [7-8]. Thus, representing the [- here-and-now] feature of Robinson's developmental complexity. Moreover, these sentences contain one element of causal reasoning **ngenxa** (because of) in line [7], thus representing the [- no reasoning] feature. The sentences in lines [7-8] does contain examples of temporal references such as **namhlanje** (today) in sentence [7], **ngesonto elidlule** (last week) and **ngomSombuluko** (on Monday) in sentence [8], thus denoting [- few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this segment demonstrates a high-level segment of developmental complexity.

This phase represents a single task example, as the doctor communicates with the mother of the child only, by offering assistance. The content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [+ single task], [- planning] and [- prior knowledge] along the resource-dispersing dimension of Robinson's Cognition Hypothesis, which illustrates a high level of performative complexity and low developmental complexity. Thus, this phase exhibits features that fall in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework based on his Cognition Hypothesis (2005) illustrating a high performative and low developmental complexity on the part of the doctor.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the introductory phase is complex to perform along both the resource-directing and dispersing variables. It requires the participant, in the role of the patient, to narrate events in the past tense. Causal reasoning and few elements are provided. By virtue of the SSARC model, this task can

be descaled along the resource-directing dimensions. The events could be provided using the present tense. Providing no elements for reasoning and giving less information could be included to this task. Along the resource-dispersing dimensions, the task can be descaled where the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform only a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This segment mostly consists of simple sentences and therefore describes a low level of syntactic complexity. These sentences express short mono-clausal questions and answers. However, the sentence in line [3] **Nguwena ogulayo noma ulethe umntwana** (Is it you who is sick or did you bring the child) begins with a main relative clause **nguwena ogulayo** (is it you who is sick), followed by a conjunction **noma** (or) that introduces a perfect past indicative clause **ulethe umntwana** (did you bring the child). A notable increase in syntactic complexity is also evident in lines [7-9]. The sentence **Ngilethe umntwana namhlanje ngenxa yokuthi wayebonwe udokotela ngesonto elidlule wabe esethi asobuya ngomsombuluko ukuze aphinde asibone** (I brought my child today because last week the doctor saw her and she said we must come back on Monday to see us again) is recognized as compound because it comprises of three independent clauses. The main perfect past indicative clause **ngilethe umntwana namhlanje** (I brought my child today) is followed by a conjunction **ngenxa yokuthi** (because). The second compound clause expressed in the remote past continuous **wayebonwe** (doctor saw her) consisting of a passive clause and then followed by the instrumental **nga-** with a relative clause in **ngesonto elidlule** (last week). The last independent clause features a copula verb **wabe esethi** (and she said) followed by a subjunctive **asobuya** (we must come back) and an instrumental **nga-** in **ngomsombuluko** (on Monday). This is then followed by a subjunctive mood complement clause **ukuze aphinde asibone** (so that she sees us again).

The compound sentences described above are syntactically complex and thus exhibit a higher level of syntactic complexity in terms of Foster et al.'s Analysis of Speech Unit Model (2000).

(ii). The diagnostic phase of questioning, instructing and explaining

Cognitive complexity

Lines [12-51] constitute the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's cognitive complexity model.

In this segment, the sentences of lines [12 -35] illustrate the **pre-examination phase** of the consultation. The sentence of line [12] begins with the doctor asking the patient what was the problem last week, thereby using the simple past tense, denoting the [+ there-and-then] dimension. The patient explains and narrates the happenings in the past. Therefore, it represents the [+there-and-then] dimension of developmental complexity. The sentences of lines [14 – 20] are all expressed in the past tense thus representing the [+there-and-then] feature of the developmental complexity. Several temporal and spatial locational references are evident in this part of the segment. Temporal references, **ekuseni** (in the morning) occurs in the sentence in line [15] and spatial locational references are occur in sentences of lines [15] and [16], **emqaleni** (in the glands) and **ezilondeni** (to the sores). These elements therefore represent the [-few elements] feature of the developmental complexity. In addition, there are two examples of causal reasoning, one described in the sentence in lines [17] **ukuze** (so that) and the other **ngoba** (because) in sentence [29], thus denoting [-no reasoning]. Therefore, this segment is an example of a high-level segment of developmental complexity, according to Robinson's Triadic Componential Framework (2005).

Moreover, this segment of the dialogue is an example of a high level of performative complexity in that the doctor has to perform several tasks. The doctor has to listen to the mother of the child and simultaneously, draw on prior knowledge as well as formulate appropriate questions before communicating to the mother. These represent the [-single tasks] feature of performative complexity. There is no time to plan on the part of the doctor, hence [-planning] feature is described. The doctor's professional expertise and knowledge of the current situation would come into effect, therefore [- prior knowledge] feature of performative complexity would apply. By virtue of Robinson's Triadic Componential Framework (2005), this phase describes the properties characteristic of category four, namely high developmental and high performative complexity on the part of the doctor.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The **pre-examination** phase is also considered a complex task as it places greater communication demands on the participants. The task requires the participants to narrate events that happened in the past, at different places and times. It also requires participants to perform multiple tasks with no prior knowledge or planning time provided. In order to descale this task, according to the SSARC model (2010), the participant in the role as the doctor could be given planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. In addition, the participant in the role as the patient could be required to reduce the elements of reasoning [+no reasoning], describe the presenting complaint in the present tense [+here-and-now] as well as provide less

information on location or spatial references [+few elements]. This task too, conforms to Step 1 of the SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

The **pre-examination** phase of this segment comprises of a few simple mono-clausal sentences that are evident in lines [13, 25, 26, 34 and 43]. However, the sentence **Ubenani umntwana uze umlethe ngesonto eledlule** (what did the child have when you brought her last week) found in line [13] features a main recent past continuous tense clause with a complement subjunctive clause **uze umlethe** (you brought her) denoting consecutive action. This clause is further followed by an instrumental **nga-** with a relative clause in **ngesonto eledlule** (last week).

The sentence **Wavele waphuma izilonda, zaphihlika umzimba wonke waze waphuma nezindlala emqaleni ezazibuhlungu** (she had sores all over her body and her glands were painful) comprises of two independent clauses. The first independent clause **wavele waphuma izilonda** (she had sores) is expressed in the remote A-past tense, consisting of a consecutive mood clause complement. The second independent clause **zaphihlika** (all over) features the remote A-past tense followed by the use on an inclusive pronoun **umzimba wonke** (her body). This is then further followed by another complex past tense clause **waze waphuma** (appeared) with the associative copulative clause **na-** adjunct in **nezindlala emqaleni** (in the glands), which also consists of a locative adjunct as well as a remote continuous tense relative adjectival clause in **ezazibuhlungu** (which was painful).

Line [15] **Uma evuka nje ekuseni impahla ayigqokile ibisuke isinamathele ezilondeni, kuze kulamule ukuthi simfake amanzi ukuze kuthambe bese eyakhumula ke** (when she wakes up in the morning her clothes are stuck to the sores until we put her in water to make it soft after that she will take off the clothes) features three dependent clauses. The main participial mood clause **uma evuka** (when she wakes up) is followed by a multi-clause past tense complement clause **ayigqokile ibisuke isinamathele** (her clothes are stuck) and a locative adjunct in **ezilondeni** (to the sores). The deficient verb **kuze** (until) then introduces a dependent subjunctive clause **kulamule** (helps), followed by the next conjunction **ukuthi** (is that), which introduces another subjunctive complement clause **simfake amanzi** (we put her in water). The last dependent clause is introduced by the conjunction **ukuze** (so that), followed by a subjunctive mood complement clause and then the conjunction **bese** (and then) follows a situative complement clause in **eyakhumula ke** (she will take off the clothes).

conjunction **kodwa** (but) that introduces the present indicative complement clause **usuyaphela** (it will not be enough).

The sentences described above are predominantly complex and therefore illustrate a high level of syntactic complexity according to Foster et al.'s Analysis of Speech Unit Model (2000).

(iii). The directive phase

Cognitive complexity

The **directive phase** of the consultation is illustrated in sentences [36-56]. All sentences in this segment are depicted using the present tense, hence the [+here-and-now] feature of developmental complexity is invoked. Causal reasoning occurs in this segment of the dialogue, with the use of the logical subordinators **kumele** (you must) in the sentence in line [36] and **ngoba** (because) in the sentence in line [38], thus denoting the feature of [-no reasoning]. There is one example of spatial reference in the sentence in line [53], **ewindini** (from the window) [- few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of high developmental complexity.

This segment is an example of a high-level performative complexity. The doctor is required to perform multiple tasks, denoting a [-single task] along the resource-directing dimension. First, to inform the mother to collect the medication from the pharmacy and second, to explain the prognosis of the child's condition to the mother. It is evident in this segment; the doctor's professional expertise provides the relevant knowledge required to advise the mother regarding this situation. As a result, the doctor does not require much planning time to figure out what will follow. Hence, no planning is required on the doctor's part [- planning]. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. By virtue of Robinson's Triadic Componential Framework, this phase is an example of a high-level segment of performative complexity. Therefore, this phase exhibits features of category four, which is associated with high developmental and high performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **directive phase** is complex to perform just as in the case of the introductory and pre-examination phases. The same descaling process (see discussion in Section 4.2.4) has applied to the pre-examination segment above could also be applied to this phase.

Syntactic complexity at sentence and clausal level

In this segment of the **directive phase**, the sentences found in lines [52, 55 and 56] are expressed as simple mono-clausal sentences. However, there are several complex compound sentences evident in this segment. For instance, the sentences in lines [36-39], the doctor advises the mother of the child to practice hygiene habits. The sentence **Kumele niqiniseke ukuthi umntwana akadlali esihlabathini isikhathi esiningi noma edlale khona ageze, engalali engagezanga** (You have to make sure that the child does not play too much in the sand even when she does play she must bath, she must not sleep without bathing) contains complex syntactic sentences. The main subjunctive clause in **Kumele niqiniseke** (You have to make sure) is followed by the conjunction **ukuthi** (that), which introduces a subordinate present negative clause **umntwana akadlali** (the child does not play) with a locative **esihlabathini** (in the sand) and relative adjectival **isikhathi esiningi** (too much) adjuncts. Thereafter, the conjunction **noma** is followed by three complement clauses, a situative participial mood clause **edlale khona**, a subjunctive clause **ageze** and a negative situative negative participial mood clause **engalali engagezanga**, thus denoting simultaneous actions.

Another example of this conversation the doctor continues his advice as follows. In the complex sentence **Okuphephile futhi okungcono ukuthi adlale otshanini noma kuvelanda ngoba kungenzeka ukuthi uzithathe lapho izilonda** (It is safe to play on the grass or in the veranda because it could be possible that she got an infection from there) several clausal sentences are evident. The main relative clause is followed by the conjunction **futhi** (and), which introduces another relative clause. This is then further followed by a conjunction **ukuthi** (that), which introduces a subjunctive, complement clause **adlale** (she plays) with two locative adjuncts **otshanini** (on the grass) and **kuvelanda** (in the veranda), separated by a conjunction **noma** (or). The conjunction **ngoba** (because) introduces the next complement clause **kungenzeka** (it is possible). Another conjunction **ukuthi** (that) then introduces a subjunctive complement clause **uzithathe** (she got the infection).

The sentence in line [44] **Kungabe kukhona ofisa ukukubuza noma okukukhathazayo** (is there anything you want to ask or something that is troubling you) begins with a main potential copulative

clause **kungabe** (is there anything) followed by a relative complement clause **ofisa** (that you want) and an infinitive clause **ukukubuza** (to ask). The conjunction **noma** (or) is then followed by another relative indicative complement clause **okukukhathazayo** (that is troubling you). The complex sentence in line [48-49] **Kanti khululeka mama, uma uzokwenza njengoba uyalelwe udokotela uzophila kanti futhi uma kukhona okuvelayo ngingabuya** (You can relax, if you are going to do as I have told you she is going to be fine but if something comes up you must comeback) features a number of clausal sentences. The main imperative mood clause is followed by a participial dependent mood clause **uma uzokwenza** (if you are going to do) and then by another conjunction **njengoba** (as). Thereafter a passive complement clause follows **uyalelwe udokotela** (the doctor told you) with a future indicative mood clause **uzophila** (she will be fine). The last subordinate clause **kanti futhi uma kukhona okuvelayo ungabuya** (but if something comes up you must comeback) features the conjunction **kanti futhi** (but) followed by the participial mood conjunction **uma** (if), which is then further elaborated with a relative clause **okuvelayo** (comes up) and a potential morpheme **nga-** (can) in **ungabuya** (come back).

The complex sentence in line [53] **Kubonga mina, senizodlula ewindini nithathe umuthi wokugcoba** (Thank you too, please pass by the ‘window’ for the ointment) is also realized as multi-clausal. The main present indicative clause **kubonga mina** (Thank you too) is followed by a future tense indicative clause **senizodlula** (pass by) with a locative adjunct **ewindini** (the ‘window’). A subordinate subjunctive clause **nithathe** (take) is then followed by a possessive infinitive **umuthi wokugcoba** (ointment).

Since the sentences featured above are mostly complex in structure, it is evident that this segment describes a high level of syntactic complexity, according to Foster et al.’s Analysis of Speech Unit Model (2000).

Syntactic complexity at phrasal level for task four

A number of NPs containing modifiers such as nominal and clausal relatives, descriptive possessives and quantifiers are evident in this dialogue. The nominal modifiers consist of lexical heads and clausal relatives, which are evident in lines [3], [8], [15] and [32]. The noun phrases **nguwena ogulayo** (is it you who is sick) in line [3], **ngesonto elidlule** (a week that has past) in line [8], **nezindlala emqaleni ezazibuhlungu** (glands which are painful) in line [15] and **umuthi owanele** (enough ointment) in line [32] are typical examples of clausal relatives. The noun phrase **isikhathi esiningi** (too much time) in line [36] is an example of a nominal relative. An example of descriptive possessive is provided in line

[21] **ikhadi lomntwana** (card of the child) whereas an example of a quantifier is evident in line [14] **umzimba wonke** (the whole body).

The selected noun phrases illustrated above are realised as complex because the noun phrases consist of a lexical head with a modifier (i.e. nominal and clausal relatives, descriptive possessives and quantifiers) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) discussed in section 4.3.1.

4.5.5 Task descriptor 5

Isiguli sowesilisa esineminyaka engama-39 siphuthuma esibhedlela sibambe isifuba saso ngoba sizwa izinhlungu ezinkulu. Siyaqala ukuza esibhedlela kodwa sike saba nale nkinga ngaphambilini. Njengodokotela osemsebenzini, kufanele ubuze isiguli ngesimo saso sezempilo. Buza isiguli ukuthi sibuzwa kuphi ubuhlungu, nokuthi besenzani ngesikhathi kuqala ubuhlungu nokuthu kukhona yini ezinye izinkinga esike saba nazo. Sibuze ukuthi kukhona yini imithi esiyisebenzisayo nomlando waso wezempilo. Kuzodingeka ukuthi ubuze futhi ngomlando womndeni nomlando wobudlelwano baso emphakathini. Vala ingxoxo yakho nesiguli ngokusazisa ukuthi uzokwenza i-ECG nokusihlola igazi.

A 39-year-old male patient rushes to hospital clutching his chest as he is feeling severe pain. It is the first time coming to the hospital, but he had this problem before. As the medical doctor on duty, you will have to enquire about the patient's condition. Ask the patient where he feels the pain, what was he doing when the pain started and are there any other problems he is experiencing. Ask him if he is on any medication and about his past medical history. You will need to ask about family history and his social history as well. Conclude your consultation by telling the patient that you will do an electrocardiogram (ECG) and do a blood test.

4.5.5.1 Dialogue 5

D = Doctor

P = Patient

[Language functions]

D: Sawubona baba, unjani? (Hallo, how are you)? (1)

[Greeting], [Enquiry after well being]

- P: Ngisezinhlungwini dokotela. (*I am in pain doctor*). (2)
[Response to greeting]
- D: Ngicela ungitshela ukuthi kwenzekani? (*Please tell me, what is happening*)?
[Follow-up questions]
- P: Kusukela emahoreni ayi-6 adlule ngiqalile ukucinana ngathi ngiphelelwa umoya, ngesikhathi esifanayo izinhlungu zaqala esifubeni. Bengicabanga ukuthi kuzodlula kodwa emva kwehora mangiya ekamelweni kuba buhlungu kakhulu. Bengicabanga ukuthi mangihlala phansi kuzoziphelela kodwa kuthe uma kuphela ihora ngaqala ngaphalaza. (*In the past six hours, I have been struggling to breathe and at that time, the pain started. I was thinking it is going to pass but after an hour, and as I went to the bedroom, I felt more pain. I was thinking if I sit down I will not feel pain but after one hour, I started vomiting*).
[Explanation regarding events that lead to the pain]
- D: Kubuhlungu kuphi nendawo esifubeni? (*Where do you feel the pain in you chest?*) (13)
[Enquiry about location of pain]
- P: Kukhona into engicindezelayo. (*It is like there is something that is pressing me*). (15)
[Description of pain]
- D: Ikhona enye indawo lapho lobu buhlungu budlulela khona? (*Is there any place that you feel this pain radiating?*) (17)
[Follow-up questions on associated pain]
- P: Ngibuzwa nasengalweni yami yesinxele. (*I also feel pain in my left arm*). (18)
[Description of radiating pain]
- D: Ubuwenzani ngesikhathi konke lokhu kuqala? (*What were you doing the time all this started?*) (20)
[Enquiry about patient's activities at the time of pain]
- P: Bengikhuphuka esitebhisi. (*I was walking up the stairs*). (21)
[Provision of answer]
- D: Azikho ezinye izinkinga obunazo? (*Are there any other problems that you have?*) (23)
[Follow-up questions about other related problems]
- P: Yebo, kunazo ngizwa ngathi nginesiyenzi (*Yes there is, I feel dizzy*). (24)
[Description of other related problem]
- D: Uma uthwala into esindayo uthi bekuba buhlungu kakhulu? (*You are saying if you carry something heavy does it get worse*). (26)
[Comment of possible aggravating circumstances]

- P: Yebo, kunjalo (Yes) (27)
[Response]
- D: Akhona amaphilisi owaphuzile? (Did you take any medication?) (28)
[Enquiry about medication]
- P: Ngiphuze awezinhlungu kodwa kuyazifanela nje, yingakho ngigijime ngeza lapha ngemoto. (*Yes, I took painkillers but it is still the same, that is why I came here quickly by car.*) (31)
[Response to medication]
- D: Akhona amanye owaphuzayo? (*Is there any other pills that you take?*) (32)
[Follow-up questions about other medication]
- P: Ngiphuza amaphilisi kashukela. (*I take diabetes pills.*) (33)
[Response to other medication]
- D: Kulungile ayikaze yenzeke into enjena phambilini? (*It is fine, has this ever happened before.*) (35)
[Enquiry regarding previous pain experienced]
- P: Eminyakeni emibili edlule ngike ngaba nabo ubuhlungu obunje kodwa baziphelela. (*In the last two years, I had the same problem, but it disappeared.*)
[Response to previous pain experienced]
- D: Kulungile awuzanga esibhedlela ngaleso sikhathi? (*Okay, you did not come to hospital in that time.*) (39)
[Enquiry about previous hospital visit]
- P: Cha angizanga, bengicabanga ukuthi sengilaphekile. (*No, I did not; I thought I was treated.*) (41)
[Response to hospital visit]
- D: Kulungile, akukaze kwenzeke ukuthi ulale esibhedlela noma uhlinzwe? (*It is okay, have you ever been admitted to the hospital or have had an operation?*)
[Enquiry regarding previous hospitalization and past surgery]
- P: Cha angikaze (No, never). (44)
[Response to previous hospitalization and past surgery]
- D: Ngicela ukubuza ngomndeni. Ekhaya kini akekho oke waba nale nkinga onayo? (*Can I ask you about your family? At home, is there anyone who had this problem?*) (47)
[Enquiry about family history]
- P: Obhuti bami banehayihayi, bobabili babulawe izifo zenhliziyu. (*My brothers have BP; both died from heart disease.*) (49)

requirement 2b. Both participants (doctor and patient) work toward a convergent goal and a single outcome. The doctor and the patient want to obtain all the relevant information that they both do not know, i.e. the doctor needs to know what the cause of the patient's chest pain is and the patient needs to know if the chest pain will subside. Therefore, they are also relating to the configurations of goal orientations 3a and outcome option 4a in Table 2-1. According to Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2), interaction is required (+) in order to reach the convergent goal (+) and the single outcome (1) of the task.

Lines [59 – 63] can also be an example of a decision-making task. One participant (doctor) decides the plan forward as to how to treat the patient's medical condition. Both participants (doctor and patient) have shared access to the information needed to complete the task, namely to plan shared decision-making (X=Y).

In terms of the categories in Table 2-1 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2), this task relates to interactant relationship 1c and interaction requirement 2c. According to Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2), the participants (doctor and patient) converge toward a single decision as their goal, i.e. to run the blood tests and conduct an ECG (+). In this scenario, interaction is not required (-), but the interactant (doctor) chose to make a decision (run a battery of tests and treat the patient).

(i). The introductory phase

Cognitive complexity

Lines [1- 12] constitute the introductory phase or the initiating the session phase. These sentences are analysed by virtue of Robinson's (2005) framework for task analysis, specifically in terms of the cognitive complexity dimension.

The use of the both present and past tenses are used in the communication between the doctor and the male patient in lines [1-12]. Thus, representing the [- here-and-now] feature of Robinson's developmental complexity. There is evidence referring to temporal references such as **emahoreni ayi-6** (in the six hours) in sentence of line [4], **emva kwehora** (after an hour) in sentence of line [6] and **uma kuphela ihora** (after one hour) in sentence of line [8]. Spatial reference is indicated by one example in sentence of line [6] **ekamelweni** (to the bedroom). These sentences therefore depict the [- few elements] feature. The sentences of lines [5-6] and [7] express causal reasoning **bengicabanga**

ukuthi (I was thinking), thus representing the [- no reasoning] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this segment demonstrates a high-level segment of developmental complexity.

This segment is an example of low-level performative complexity. The doctor requires listening carefully to the patient's problem, thus representing a single task [+ single task]. The content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- planning] and [- prior knowledge] along the resource-dispersing variable of Robinson's Cognition Hypothesis, which illustrates a low level of performative complexity and high developmental complexity. Thus, this phase exhibits features that fall in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework based (2005) on his Cognition Hypothesis illustrating a high performative and high developmental complexity on the part of the doctor.

Decomplexification of target task of according to the SSARC model (Robinson, 2010)

The task in the **introductory phase** is complex to perform along both the resource-directing and dispersing variables. It requires the participant, in the role of the patient, to describe events using the past tense. There are elements of reasoning and few elements occur. In terms of the SSARC model, this task can be descaled along the resource-directing variables. The events could be provided using the present tense. This task could exclude elements for reasoning and providing less information could be included to this task as well. The task can also be descaled along the resource-dispersing variables, where the participant in the role as the doctor could be given planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

The pleasantries exchanged in lines [1] and [2] occur as simple mono-clausal sentences. However, the sentences in lines 3 -8 consist of several complex sentences. For example, line [3], **Ngicela ungitshela ukuthi kwenzekani** (please tell me, what is happening) starts with the main clause **ngicela** (please) followed by a complement subjunctive clause **ungitshela** (tell me). This is followed by another complement clause **ukuthi kwenzekani** (what is happening), consisting of a conjunction **ukuthi** (that) and a question clause **kwenzekani** (what is happening).

Other examples of complex sentences are evident in lines [4-8]. The sentence in line [4] **Kusukela emahoreni ayi-6 adlule ngiqalile ukucinana ngathi ngiphelelwa umoya, ngesikhathi esifanayo izinhlungu zaqala esifubeni** (In the past 6 hours, I have been struggling to breathe and at that time, the pain started in the chest) is an example of a compound multi-clause sentence. The main clause **kusukela emahoreni ayi-6 adlule** (in the past 6 hours) is followed by a complement clause **ngiqalile ukucinana** (struggling to breathe), consisting of recent past tense followed by the infinitive complement clause **ukucinana** (to breathe). This clause is then followed by another complement clause **ngathi ngiphelelwa umoya** (when out of breathe), consisting of a conjunction **ngathi** (when) and a passive indicative mood **ngiphelelwa** (being out of). The last complement clause starts with **ngesikhathi esifanayo** (at the same time), which is a prepositional phrase modified by a relative clause, followed by a subordinate clause **izinhlungu zaqala esifubeni** (pain started in the chest) that contains a remote A- past tense and a locative adjunct **esifubeni** (in the chest).

The sentence in lines [5-6], **bengicabanga ukuthi kuzodlula kodwa emva kwehora mangiya ekamelweni kubabuhlungu kakhulu** (I was thinking it is going to pass but after an hour, and as I went to the bedroom, I felt more pain. I was thinking if I sit down I will not feel pain but after one hour, I started vomiting) consists of a main recent continuous past tense clause **bengicabanga** (I was thinking), followed by the conjunction **ukuthi** (that), which is then followed by a future indicative mood **kuzodlula** (it will pass). The next complement clause is introduced by the conjunction **kodwa** (but), followed by an adverbial phrase of time **emva kwehora** (after an hour). The last complement clause begins with a present participial situative mood **mangiya** (as I was going), followed by a locative adjunct **ekamelweni** (to the bedroom), and then further complemented by an indicative copula verb **kuba buhlungu** (I felt more pain).

The sentence in line [7-8] begins with the main recent continuous past tense clause **bengicabanga** (I was thinking), followed by the conjunction **ukuthi** (that) and then further followed by a present participial situative mood **mangihlala** (if I sit down) and a future indicative mood clause **kuzoziphelela** (it will disappear). The next complement clause starts with **kodwa kuthe** (but), followed by a participial situative mood **uma** (when) and then later by a remote past tense indicative mood clause **ngaqala ngaphalaza** (I started vomiting).

Since this segment, which consists of mostly complex sentences, a considerable higher degree of syntactic complexity is evident. Therefore, according to Foster et al.'s Analysis of Speech Unit Model (2000), this segment characterizes a high level of syntactic complexity.

(ii). The diagnostic phase of questioning, instructing and explaining*Cognitive complexity*

Lines [13-59] constitute the the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's cognitive complexity model (2005).

The **diagnostic phase** occurs in sentences [13 -59]. The sentences of lines [13-22] begins with the doctor asking the patient questions relating to the pain in his chest, thereby using the present tense, denoting the [+ here-and-now] dimension. The patient explains and describes the pain using the present tense, except in sentence of line [22] where the past tense is used. The sentences of lines [36 – 45] are all expressed in the past tense when the doctor and patient discusses past medical history, thus representing the [+there-and-then] feature of the developmental complexity. Therefore, it represents the [+there-and-then] dimension of developmental complexity. This part of the segment consists several temporal and spatial locational references. While there are temporal references, **eminyakeni emibili** (in two years) occurring in sentence of line [37] and **ngaleso sikhathi** (in that time) in sentence of line [39], spatial locational references occur in sentences of lines [13] **esifubeni** (in the chest), [19] **nasegalweni** (in the arm), [22] **esitebhisi** (up the stairs), [39-43] **esibhedlela** (to hospital) and [46] **ekhaya** (at home). These elements therefore represent the [-few elements] feature of the developmental complexity. In addition, there is one example of causal reasoning described in sentence of line [29] **yingakho** (that is why) thus denoting [- no reasoning]. Therefore, this segment is an example of a high level segment of developmental complexity, according to Robinson's Triadic Componential Framework (2005).

Moreover, this segment of the dialogue is an example of a high level of performative complexity in that the doctor has to perform several tasks. The doctor has to listen attentively to the patient narrating his past medical history and events that lead to the chest pain. At the same time, the doctor has to rely on prior knowledge as well as formulate appropriate questions before communicating to the patient. All of the above sequences indicate the following features of [- single tasks], [- planning] and [+ prior knowledge] of performative complexity. Therefore, by virtue of Robinson's Triadic Componential Framework (2005), this phase describes the properties characteristic of category four, namely high developmental and high performative complexity on the part of the doctor.

Decomplexification of target task of according to the SSARC model (Robinson, 2010)

The **pre-examination** phase is also regarded as a complex task since greater communication demands are placed on the participants. The task requires participants to describe events that happened in the past, at different places and times. It also requires participants to perform multiple tasks with no prior knowledge or planning time given. According to the SSARC model (Robinson, 2010), this task can be descaled whereby the participant in the role as the doctor could be given planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. Furthermore, the participant in the role as the patient could be required to exclude elements of reasoning [+no reasoning], describe the presenting complaint in the present tense [+here-and-now] as well as provide less information on location or spatial references [+few elements]. This task conforms to Step 1 of the SSARC model (2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

The diagnostic phase of this dialogue segment contains a combination of shorter and longer communication exchanges. Some of the shorter exchanges are analysed as follows. Line [12] consists of a main independent clause **kubuhlungu kuphi** (where do you feel pain) followed by an associative copulative clause **na-** and a locative adjunct **esifubeni** (in the chest). Line [14] begins with a main indicative clause **Kukhona into** (it is like), followed by a relative present indicative clause **engicindezelayo** (that is pressing me). The question phrase **Ikhona enye indawo lapho lobu buhlungu budlulela khona** (is there any place that you feel this pain radiating) contains a main independent clause **ikhona enye indawo** (is there a place). The conjunction **lapho** (where) introduces a complement clause, which contains a demonstrative adjunct **lobu buhlungu** (this pain) with an indicative clause **budlulela khona** (radiating).

Several other examples of relatively complex syntactic sentences are also evident. These examples are analyzed below. Line [18] starts with a passive indicative mood clause **Ngibuzwa** (I also feel it) followed by the association **na-** with a locative adjunct **nasengalweni** (in the arm) and then further followed by the possessive concord **ya- yesinxele** (left). Line [22] is a negative main clause **azikho** (there is not) followed by a relative complement clause **ezinye** (other) and then by another relative complement clause with the associative copulative clause **na-** and pronoun **obunazo** (that you have).

The sentence in line [25] consists of a main conjunction participial mood clause **uma uthwala** (if you carry) followed by a relative complement clause **into esindayo** (a heavy thing) and then further followed by a complement clause consisting of a copula verb **bekuba buhlungu kakhulu** (it gets

worse). Another complex syntactic sentence occurs line [29]. It consists of main past independent clause **Ngiphuze awezinhlungu** ((I took painkillers), followed by the conjunction **kodwa** (but), which introduces a complement present indicative clause **kuyazifanela nje** (it is still the same). This is then followed by another dependent clause **yingakho ngigijime ngeza lapha ngemoto** (that is why I came here quickly by car) that consists of a conjunction **yingakho** (that is why) followed by a complement subjunctive clause **ngigijime ngeza** (I came quickly), then followed by the instrumental **nga-** in **ngemoto** (by car).

The sentence in line [36] **Eminyakeni emibili edlule ngike ngaba nabo ubuhlungu obunje kodwa baziphelela** (in the last two years, I had the same problem, but it disappeared) contains the main relative past tense clause **eminyakeni emibili edlule** (in the last two years) followed by past copula verb **ngaba** (I had) and the associative copulative clause **na-** in **nabo**. The conjunction **kodwa** (but) introduces a complement past clause **baziphelela** (it disappeared) with a reflexive particle **-zi**. The sentence in line [40] starts with an independent negative past clause **Cha angizanga** (no I did not). This is followed by another independent clause **bengicabanga** (I thought), which is followed by the conjunction **ukuthi** (that) that introduces a complement past indicative mood clause **sengilaphekile** (I was now treated).

Line [42] contains a complex compound sentence, **Kulungile, akukaze kwenzeke ukuthi ulale esibhedlela noma uhlinzwe** (it is okay, have you ever been admitted to the hospital or have had an operation). The sentence contains an independent mono-clausal **Kulungile** (it is okay), which is followed by another independent main clause **akukaze kwenzeke** (have you ever been) followed by the conjunction **ukuthi** (that), which introduces a complement subjunctive mood clause **ulale** (admitted) and then a locative adjunct **esibhedlela** (to the hospital). The conjunction **noma** (or) introduces the last complement passive clause **uhlinzwe** (had an operation).

The sentence in line [55] consists of a main present indicative mood clause **ngiyabhema** (I smoke) followed by a conjunction **kusukela** (since). This conjunction introduces another independent present indicative mood clause **ngineminyaka engamashumi amabili nesithupha** (I was 26 years old) that consists of the associative copulative clause **na-** in **ngineminyaka** (I have years), followed by a relative clause **engamashumi amabili** (which are 20) as well as another associative **na-** adjunct in **nesithupha** (and six).

Because of the fact that this segment comprises mostly of complex compound clauses, it is therefore illustrates a high level of syntactic complexity. In terms of Foster et al's Analysis of Speech Unit

Model (2000) discussed in Section 4.3 of this chapter, this segment describes a high level of syntactic complexity.

(iii). The directive phase

Cognitive complexity

Lines [59 – 65] represent the closing session of the consultation, which is analysed by virtue of Robinson's cognitive complexity model.

All sentences in this phase are expressed in the present tense, hence the [+ here-and-now] feature of developmental complexity along the resource-directing dimension. There is no causal reasoning [+ no reasoning] and no spatial or temporal references [+ few elements] evident in this phase. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment is an example of a high-level performative complexity. The doctor is only required to perform a single task by informing the patient about the ECG procedure to follow and the blood sample to be taken, thus exhibiting [+ single task] feature. This directive is illustrated in sentence [59-62]. There is no planning time required on the doctor's part [- planning] as this is part of routine procedures. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. In terms of Robinson's Triadic Componential Framework (2005), this phase is an example of a high-level segment of performative complexity. Therefore, this phase exhibits features of category two, which is associated with low developmental and high performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task of according to the SSARC model (Robinson, 2010)

The **directive phase** consists of a simple task to perform along the resource-directing variables in that it requires the participant, in the role of the patient, to describe events using the present tense. Neither elements of reasoning nor additional information is provided. However, the task can be descaled along the resource-dispersing variables. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge]. This descaling process of the task conforms to Step 2 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this segment, the complex sentence **Asikuhlole kuqala bese senza okunye ukuhlola** (Let us start to examine you and then we must do some tests) in line [59] consists of a main subjunctive clause **asikuhlole** (let us examine), which is followed by the conjunction **bese** (and then). This is then further followed by a complement clause **senza okunye ukuhlola** (we must do some tests) that consists of a relative clause **okunye** (some) and an infinitive **uku-** in **ukuhlola** (to test). The sentence **Sizoqala sikuhlole i-ECG bese sihlola igazi** (we will start by doing an ECG and then we will do a blood test) in line [59-60] is also realized as a complex compound clause. It consists of a main independent future indicative mood clause **sizoqala sikuhlole** (we will start), which is followed by a conjunction **bese** (and then), introducing another independent indicative mood clause **sihlola igazi** (we do a blood test).

Sentences in line [63] and [64] of this segment of the dialogue occur as simple mono-clausal sentences. The fact that this segment contains mostly complex sentences, it characterizes a higher level of syntactic complexity, according to Foster et al.'s Analysis of Speech Unit Model (2000).

Syntactic complexity at phrasal level for task five

This dialogue contains a wide range of NPs with modifiers including nominal and clausal relatives, descriptive and semantic possessives and demonstratives. A few selected NPs are described hereafter. The nominal modifiers consist of lexical heads and clausal relatives, which are evident in lines [5] and [25]. The noun phrases **ngesikhathi esifanayo** (at the same time) in line [5] and **into esindayo** (a heavy object) in line [25] are examples of clausal relatives. Examples of nominal relatives are evident in line [23] **ezinye izinkinga obunazo** (any other problems that you have) and in line [36] **eminyakeni emibili edlule** (in the two years that have passed). Descriptive and semantic possessives found in noun phrases are evident in lines [18] **nasengalweni yami yesinxele** (in my left arm), [33] **amaphilisi kashukela** (pills for sugar) and in line [48] **izifo zenhliziyo** (disease of heart). Examples of demonstratives are provided in lines [16] **lobu buhlungu** (this pain) and [45] **nale nkinga onayo** (anyone who had this problem). Line [45] also includes a nominal relative **onayo** with the demonstrative phrase.

The noun phrases described above are realised as complex since the noun phrases contain lexical heads with modifiers (i.e. nominal and clausal relatives, descriptive and semantic possessives and demonstratives) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) discussed in section 4.3.1.

- [Enquiry regarding the occurrences of such problem]
- P: Cha kuyaqala. (*No, it is the first time*). (13)
- [Response to question]
- D: Engabe uyalisebenzisa ijazi lomkhwenyana? (*Do you use condom*)? (14)
- [Asking about safe protection]
- P: Cha ngishadile mina. (*No, I am married*). (15)
- [Giving confirmation/information]
- D: Engabe nomama uphathekile naye? (*Is your wife also sick*)? (16)
- [Asking information about spouse]
- P: Cha! (*No*)! (17)
- [Giving response]
- D: Ngicela ulale ubheke phezulu, kubuhlungu uma ngithinta la esiswini. (*Please sleep here and face up, is it painful when I touch on the stomach*)? (19)
- [Instructing patient to lie down for examination]
- P: Yebo. (*Yes*) (20)
- [Agreement]
- D: Kulungile baba. Sicela ukuhlola umchamo wakho. Sizokunika amaphilisi uzoba ngcono. (*Okay. We would like to test your urine, we will give you some pills, and you are going to get better*). (23)
- [Indicating that urine test to be conducted], [Indicating medication to be prescribed]

4.5.6.2 Task complexity

Task typology – interactional complexity

Dialogue 6 is an example of mainly an information gap task according to Pica et al. task typology (1993). One participant (patient) holds information that is unknown to the other participant (doctor), but is required to know so that the task can be completed. This means all the information concerning the presenting complaint is needed in order to make a prognosis.

The task necessitates a two-way flow of request and supply of information. One participant Y (doctor) requests the information, while the other participant X (patient) supplies the information. These features correspond to interactant relationship 1b and interaction requirement 2b according to Table 2-1. Further, both participants (doctor and patient) work to achieve a convergent goal, namely, to supply and get much information as possible about the medical condition and a single outcome that

is to make a prognosis and determine a plan forward. Thus, this meets the descriptions of goal orientations 3a and outcome option 4a in Table 2-1 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2), where only one acceptable outcome is possible. In order to reach a convergent goal (+) and single outcome (1) of the task, interaction is required (+), according to Table 2-2 (Pica et al., 1993).

This dialogue is also a decision-making task. In lines 21-23 of the dialogue, the doctor is the dominant participant in reaching a decision. In terms of the categories in Table 2-1 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2), this task relates to interactant relationship 1c and interaction requirement 2c. According to Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2), the interactants (doctor and patient) converge toward a single decision as their goal, i.e. to run the urine test and prescribe medication (+). In this scenario, interaction is not required (-), as the interactant (doctor) chose to make a decision (run a urine test and prescribe some medication for the patient).

(i). **The introductory phase**

Cognitive complexity

Lines [1- 7] constitute the introductory phase or the initiating the session phase. These sentences are analysed in terms of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimension.

The communication in this **introductory segment** takes place between the doctor and patient in lines [1-7] and is conveyed using the present and one example with the past tense. Thus, representing the [+ here-and-now] feature of Robinson's developmental complexity. These sentences consist of simple sentences and does not include any causal reasoning, thus representing the [+ no reasoning] feature. There is a single example of temporal reference given in sentence of line [3] **sekuphele iviki** (it has now been a week) and one example of spatial locational reference illustrated in sentence of line [7] **sangasese** (in the private part). These examples indicate the [- few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a low-level segment of developmental complexity.

This segment does not represent a single task example as it contains the task of greeting, asking after well-being and enquiry into the problem. However, the content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- single task], [- planning] and [- prior knowledge] along the resource-dispersing dimension of Robinson's Cognition

Hypothesis (2005), which illustrates a high level of performative complexity and low developmental complexity. Thus, this phase exhibits features that fall in category two according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and low developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

In the **introductory phase**, the task can be descaled by requiring the participant, in the role of the patient, to provide less information [+few elements]. Furthermore, the task can be made less complex along the resource-dispersing dimensions by providing planning time [+ planning] and prior knowledge [+ prior knowledge] for the participant as the role of the doctor, to perform only a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this segment of the dialogue, the question expressed in line [1] is a simple clause. However, the sentence in line [3], consists of four compound clauses, the main clause is simple exchange **Ewe dokotela** (oh doctor), followed by another independent indicative mood clause **ngizizwa ngigula impela** (I am feeling sick indeed). This clause is further followed by a complement past tense indicative clause mood **sekuphele iviki** (it has now been a week). The last complement clause **ngingaphathekile kahle** (I have been feeling like this) features the potential morphem **nga-**. The sentences in this segment are predominantly simple mono-clausal and thus represent a low level of syntactic complexity.

(ii). The diagnostic phase of questioning, instructing and explaining

Cognitive complexity

Lines [9-20] constitute the the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's cognitive complexity model (2005).

During the **pre-examination phase** of the segment, the communication between the doctor and the patient is expressed by using only the present tense, thereby illustrating the [+ here-and-now] dimension. The reasoning demands of this segment are simple since the sentences do not consist of any logical subordinators to indicate causal reasoning, thus representing the [+ no reasoning] feature of the developmental complexity. There are no temporal and and spatial locational references evident within this phase of the dialogue, thus indicating the [+ few elements] feature of development

complexity. Therefore, this segment of the dialogue is an example to a low-level of developmental complexity according to Robinson's cognitive complexity model (2005).

Furthermore, this segment demonstrates a high performative level of complexity. During this segment of the dialogue, the doctor is required to perform multiple tasks simultaneously. The doctor has to listen attentively to the patient, draw on prior knowledge, rephrase or formulate more questions and reach a shared decision as to how to proceed. Moreover, these tasks will need to be performed by the doctor within a limited timeframe. Therefore, this segment represents the following performative complexity features, i.e. [- single task], [- prior knowledge] and [- planning]. With both the developmental and performative features taken into consideration, this phase represents the characteristics that fall in category two according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and low developmental complexity.

The **during-the-examination phase**, as indicated in sentences [18-20], entails the diagnostic instruction by the doctor. This communication takes place in the present tense, thus denoting the [+ here-and-now] dimension. There is no evidence of causal reasoning indicated. This segment represents the [+ no reasoning] feature of the developmental complexity. There is a single example of a spatial locational reference in sentence [18] **esiswini**, thereby indicating the [- few elements] feature of development complexity, thus representing a low level of developmental complexity.

This segment further describes the doctor having to perform multiple tasks simultaneously which indicates the [- single task] feature. These tasks include instructing the patient to lie down, physically examining the problem area (in this case the tummy area), drawing on prior knowledge and formulating a diagnosis. The feature of [+ prior knowledge] would be illustrated here as well as [+ planning] since the doctor has the time to perform and plan other tasks whilst examining the patient. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment describes features of category one, which is related to low developmental and low performative complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **pre-examination phase** is a simple task placing no cognitive demands on the participants along the resource-directing variables. However, in terms of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4), complexity can be decreased along the resource-dispersing dimensions. In order to descale this task, the participant in the role of the doctor could be provided

prior knowledge [+prior knowledge] in order to perform a single task [+single task] with planning time [-planning time] provided. In the **during-the-examination phase**, the task is simple along the resource-directing phase however, less information could have been provided [+few elements]. The task can be further descaled along the resource-dispersing dimensions, which could require the participant in the role of the doctor to perform only a single task [+single task].

Syntactic complexity at sentence and clausal level

The **pre-examination** segment of the dialogue comprises of a combination of short and longer communication exchanges. The sentences in lines [9, 13, 15, 17] are realized as simple mono-clausal sentences. An example of some of the longer complex sentences are analysed below. The sentence in line [11] consists of the main present indicative mood clause **Nginesichenene** (I am passing urine), featuring the associative copulative clause **na-**. The conjunction **futhi** (and) introduces another independent indicative mood clause **ngikhathele** (I am tired). This clause is then followed by a complement present tense clause, **umchamo uyashisa** (the urine is burning).

Another complex sentence occurs in line [12] **Baba ngabe ujwayele ukugula kanje** (do you usually get sick like this). This question comprises a potential copulative clause **ngabe ujwayele** (do you usually get) followed by an infinitive complement clause **ukugula** (sick). Considering a greater number of simple mono-clausal sentences and fewer complex compound sentences, this segment therefore illustrates a low level of syntactic complexity.

In the **during-the-examination phase**, the sentence found in line [18] **Ngicela ulale ubheke phezulu, kubuhlungu uma ngithinta la esiswini** (please sleep here and face up, is it painful when I touch on the stomach) contains three compound clauses. It features a subjunctive main clause **ngicela ulale** (please sleep), followed by the consecutive verb clause **ubheke phezulu** (face up). This is followed by a complement clause **kubuhlungu uma ngithinta la esiswini** (is it painful when I touch on the stomach), featuring the potential situative mood conjunction **uma** (when) followed by a locative adjunct **esiswini** (on the stomach). Since this segment contains a complex clause, it therefore illustrates a high level of syntactic complexity.

(iii). The directive phase***Cognitive complexity***

Lines [21 – 23] represent the closing session of the consultation, which is analysed by virtue of Robinson's cognitive complexity model (2005).

In this segment, all sentences are expressed in the present and future tenses illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing variable. In addition, there are no causal reasoning [+ no reasoning] nor is there any spatial references [+ few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a high level of performative complexity. Lines [21] and [23] indicate the doctor prescribing medication and suggesting a urine sample, thus denoting [- single task]. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. No planning is required during this phase [- planning]. In terms of Robinson's Triadic Componential Framework (2005), this phase is an example of a low-level segment of performative complexity. Therefore, it can be deduced that this phase falls into category two, which is related to low developmental and high performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The **directive phase** of this target task is a simple task along the resource-directing dimensions. However, the task can be descaled along the resource dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform a single task [+single task]. This descaling process of the task conforms to Step 2 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This segment of the **directive phase** contains one instance of a simple mono-clausal sentence, expressing agreement in line [21]. However, a complex sentence is evident in lines [21-22] as well. **Sicela ukuhlola umchamo wakho** (we would like to test your urine) are realized as complex sentence. The main present indicative mood clause **sicela** (we would like) features an infinitive verb **ukuhlola** (to test). The second example of a complex clause **Sizokunika amaphilisi uzoba ngcono**

(we will give you some pills, and you are going to get better) contains a future indicative mood clause **sizokunika** (we will give you some pills) followed by a potential copulative verb clause **uzoba ngcono** (you are going to get better).

Taking into account the limited number of simple sentences in this segment, this analysis is regarded as a high-level syntactic complexity. Therefore, according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3, this segment characterizes a high level of syntactic complexity.

Syntactic complexity at phrasal level for task six

Few examples of NPs consisting of nominal modifiers with semantic and descriptive possessives are evident in this dialogue. Examples of descriptive possessives are demonstrated in lines [7] **isitho sami sangasese** (my private part) and [14] **ijazi lomkhwenyana** (condom). Line [7] also includes a semantic possessive **isitho sami**. Line [21] **umchamo wakho** (your urine) is another example of semantic possessive.

Although dialogue six contains few examples of the noun phrases, they are realised as complex because the noun phrases consist of a lexical head with a modifier (i.e. semantic and descriptive possessive) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) which has been discussed in section 4.3.1.

4.5.7 Task descriptor 7

Umntwana onezinyanga eziyi-14 ulethwa esibhedlela umzali wakhe. Kubukeka sengathi unomkhuhlane futhi kungenzeka uyahuda. Ungudokotela osemsebenzini kulesi sibhedlela. Bingelela umama womntwana bese ubuza inkinga yomntwana wakhe. Buza umama womntwana ukuthi uke wamuhambisa emtholampilo ngaphambu kokuthi aze naye esibhedlela. Buza umama womntwana ukuthi umntwana uyashisa yini. Vala ingxoxo yakho ngokwazisa umama womntwana ukuthi uzohlola umntwana bese umubhalela umuthi wokuqubuka.

A 14-month-old baby child is brought to the hospital by her parent. She seems to have the flu and possible diarrhoea. You are the doctor on duty at this hospital. Greet the mother of the child and enquire what is wrong with her baby. Ask the mother if she has taken the child to the clinic before coming to the hospital. Ask the mother if the child has a temperature. Conclude the consultation by instructing the mother that you will be examining the baby and prescribing some medication for a rash.

- P: Cha mina bengimbona engathi usesimweni kodwa angazi emini ngoba ugadwa usisi wami. *(No, I saw that everything was fine but during the day, I do not know because my sister is taking care of her).* (25)
[Response on child's temperature]
- D: Kulungile mama ngiyezwa. Akakaze abe nalenkinga phambilini? *(It is okay, has she ever had this problem before)?* (27)
[Enquiry about past medical history]
- P: Cha! (No) (28)
[Response]
- D: Ngisacela umbeke embhedeni simhlole, ngizocela umkhumule inabukeni ume eduze kwakhe khona engezokhala kakhulu. *(Please put her on the bed for examination please take off the nappy and stand next to her so that she does not cry).* (32)
[Instructing the parent to lay baby down for physical examination]
- P: Uzomjova yini? *(Are you going to inject her)?* (33)
[Concern about an injection]
- D: Cha okwamanje angiboni kanjalo, asithole ukuthi inkinga ilaphi kuqala. *(No, I do not think so for now let us find out what the problem is).* (35)
[Statement informing parent that child will not be injected]
- D: Kulungile, mama ngithola ukuthi ingane utshabukile kancane. Ngizomnika umuthi wokutshabuka nepanado, kwandile ezinganeni ezincane ukuthi zibe nenkinga ekanje emveni kokuthi baphathwe yisisu nomkhuhlane. Ungakhathazeki uzoba ngcono. *(Okay, the baby has a rash; I will give her medication for the rash and panado, it is common for small children to have this problem after the flu and diarrhoea. Do not worry she will be fine).* (41)
[Information about the problem], [Information of prescribed medication], [Providing reassurance to child's mother]
- P: Ngiyabonga kulungile dokotela. Nisale kahle *(Thank you doctor. Stay well).* (42)
[Express gratitude], [Greeting]
- D: Nihambe kahle abe ngcono umntwana. *(Go well; we hope the child gets better soon).*
[Greeting], [Express well wishes]

4.5.7.2 Task complexity

Task typology – interactional complexity

The task in dialogue 7 can be classified as mainly an information gap task in terms of Pica et al. task typology (1993). One of the participants holds all the information that is unknown to the other person. Lines [4-28] describe one participant X (parent of patient) holds the information that is not already known to the other participant Y (the doctor). In lines [34-41], one participant X (doctor) holds the information unknown to the other participant Y (parent of patient).

This task involves a two-way flow of information ($X=Y$). The features in this task meet the conditions for interactant relationship 1b and interactional requirement 2b according to Table 2-1 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2). Both participants' (doctor and parent of the patient) goal orientation is convergent, namely, they both want to gather as much information as possible about the child's medical condition. Only one option is possible and that is the child recovers. In order to reach a convergent goal (+) and a single outcome (1) of the task, interaction is required (+), according to Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2).

This dialogue can also be an example of a problem-solving task [lines 34-41]. With this task, the participants start out with shared access to information required for completion of the task. Therefore, this corresponds to interactant relationship 1c and interaction requirement 2c of Table 2-1 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2).

According to Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2), a two-way exchange of this information is possible ($X=Y$) however, interaction may not be necessary (-) for participants to carry out the task, as one participant can work individually using the information to solve the problem, i.e. to ensure that the child recovers from the rash. In this particular scenario, both participants (the doctor and the parent of the child) are engaging in a two-way exchange of information. They are interacting in order to complete a task, i.e. to solve the problem of the medical condition. Both participants work toward a convergent goal, namely for a recovering of the child and a single outcome, i.e. the rash is treated. Therefore, it also meets the conditions of goal orientation 3a and outcome option 4a in Table 2-1 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2).

(i). The introductory phase***Cognitive complexity***

Lines [1- 9] constitute the introductory phase or the initiating the session phase. These sentences are analysed by virtue of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimension.

The communication that takes place between the doctor and mother of the baby in lines [1-9] is conveyed using the present tense, except in sentence of line [8]. Thus, representing the [- here-and-now] feature of Robinson's developmental complexity. There is just a single example of causal reasoning occurring in sentence of line [4] **ngoba** (because), thus representing the [- no reasoning] feature and time reference occurring in sentence of line [7] **ezinsukwini** (in the past days), hence [- few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a high-level segment of developmental complexity.

This phase does not represent a single task example. In this segment, the doctor has to greet the mother and ask after well-being, ask about what is happening with the child and request the age of the baby as well as a description of the problem. However, the content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- single task], [- planning] and [- prior knowledge] along the resource-dispersing dimension of Robinson's Cognition Hypothesis, which illustrates a high level of performative complexity and low developmental complexity. Thus, this phase exhibits features that fall in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and high developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **introductory phase** can be descaled by requiring the participant, in the role of the patient, to describe the presenting complaint in the present tense [+here-and-now], providing less information [+few elements] and excluding elements of reasoning [+no reasoning]. In addition, the task can be made less complex along the resource-dispersing dimensions. By providing planning time [+ planning] and prior knowledge [+ prior knowledge] for the participant as the role of the doctor, to perform only a single task [+ single task] can simplify the task. This descaling process of the task conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic Complexity at sentence and clausal level

In the introductory segment of this dialogue, a combination of short and longer complex sentences are evident. Sentences in lines [1], [2], [4] and [7] are examples of simple sentences. Examples of some complex sentences are analysed as follows. The sentence in line [4] **Hawu yini inkinga yengane ngoba engathi akanankinga nje** (what is the problem of the child because she does not look like she is sick) consists of a question clause featuring the possessive morpheme **ya-** in **yengane** (of the child). The conjunction **ngoba** (because) introduces a complement negative potential mood clause **engathi akanankinga** (does not look like she is sick).

Yena uke wagula kakhulu nje ezinsukwini waphathwa umkhuhlane wakhishwa nayisisu (in the past days, she has been sick with flu and diarrhoea) is also an example of a complex clause. It features a negative remote A past tense clause **wagula** (she was sick) followed by a locative adjunct **ezinsukwini** (in the past days) and then further followed by a dependent past tense passive clause **waphathwa** (she was suffering from) and **wakhishwa nayisisu** (she had diarrhoea).

Although this segment consists of a few complex clauses, the simple sentences outweigh them, hence a low-level syntactic complexity. Therefore, according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3, this segment characterizes a low level of syntactic complexity.

(ii). The diagnostic phase of questioning, instructing and explaining*Cognitive complexity*

Lines [10-41] constitute the the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's cognitive complexity model (2005).

In this segment, sentences in lines [10-28] constitute the **pre-examination phase** of the consultation. The sentence of line [10] begins with the doctor asking the mother whether she had taken the baby to the clinic at the time she was sick, thereby using the simple past tense, denoting the [+ there-and-then] dimension. The patient explains and narrates the happenings in the past. Therefore, it represents the [+ there-and-then] dimension of developmental complexity. The sentences of lines [21 – 26] are all expressed in the past tense thus representing the [+ there-and-then] feature of the developmental complexity. A few temporal and spatial locational references are evident in this part of the segment. Temporal references, **emini** (during the day) occurs in sentence of line [18] and **ezinsukwini** (in the past days) occurs in sentence of line [21]. Spatial locational references occur in sentence of line [10]

emtholampilo (to the clinic). These elements therefore represent the [- few elements] feature of the developmental complexity. Two examples of causal reasoning are evident in sentences of lines [18] **njengoba** (since) and [22] **ngoba** (because), thus denoting [- no reasoning]. Therefore, this segment is an example of a high-level segment of developmental complexity, according to Robinson's Triadic Componential Framework (2005).

Furthermore, this phase of the dialogue is an example of a high level of performative complexity in that the doctor has to perform several tasks. The doctor has to listen to the mother while drawing on prior knowledge as well as formulate appropriate questions before communicating them to the mother. These represent the [- single task] feature of performative complexity. There is no time to plan on the part of the doctor, hence [- planning] feature is described. The doctor's professional expertise and knowledge of the current situation would suffice, therefore [- prior knowledge] feature of performative complexity would come into effect. By virtue of Robinson's Triadic Componential Framework (2005), this phase describes the properties characteristic of category four, namely high developmental and high performative complexity on the part of the doctor.

The **during-the-examination phase**, as indicated in sentences [29-35], entails the diagnostic instruction by the doctor. This communication takes place in the present and future tenses, thus denoting the [+ here-and-now] dimension. There is no evidence of causal reasoning indicated. This segment represents the [+ no reasoning] feature of the developmental complexity. There is a single occurrence of spatial reference in sentence of line [29] **embhedeni**, thereby indicating the [- few elements] feature of development complexity, thus representing a low level of developmental complexity.

This segment further describes the doctor having to perform multiple tasks simultaneously which indicates the [- single task] feature. These tasks include instructing the mother to place baby on the bed, removing her diaper and instructing the mother to stand next to her child so she does not cry. In addition, the doctor has to rely on prior knowledge to formulate a diagnosis. The feature of [+ prior knowledge] would be illustrated here as well as [+ planning] since the doctor has the time to perform and plan other tasks whilst examining the patient. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment describes features of category one, which is related to low developmental and low performative complexity.

The **post-examination phase** of the consultation is illustrated in sentences [36-41]. All sentences in this segment are depicted using the present tense, hence the [+ here-and-now] feature of developmental complexity is invoked. There is evidence of causal reasoning occurring in sentence of line [37], with the use of the logical subordinators **ukuthi zibe nenkinga ekanje emveni kokuthi** (that they have this problem after having the flu). The feature of [- no reasoning] is depicted here. There is a single occurrence of spatial locational references in sentence of line [37], **ezinganeni** (with children) which describes the [- few elements] features of developmental complexity. Therefore, the features depicted within this segment are linked to high-level developmental complexity in terms of Robinson's Cognition Hypothesis (Robinson, 2005).

Furthermore, this segment exhibits a low-level performative complexity in that it requires the doctor to perform a single task of explaining the diagnosis to the patient. Also evident in this segment, is the doctor's professional expertise, which provides the relevant knowledge required to handle this situation. Consequently, this medical knowledge assists the doctor in that not much planning time is required to figure out what will follow. Hence, the following features relate to this segment, namely, [+ single task], [+ prior knowledge] and [- planning]. It follows, then that this phase falls into category three of Robinson's Triadic Componential Framework (2005) on the part of the doctor.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **pre-examination phase** requires participants to include elements of reasoning, narrate the presenting complaint in the past as well as events that took place at different places and times, thus placing great cognitive demand on the participants. Prior knowledge and planning time are not available to the participants. The participants are also expected to perform multiple tasks. According to the SSARC model, this phase can be descaled on both the resource-directing and resource-dispersing dimensions. For example, the participant in the role as the doctor could be provided with prior knowledge and planning time [+ planning] [+ prior knowledge] to perform just a single task [+ single task]. In addition, the participant in the role as the patient could be required to exclude the use of reasoning [+no reasoning], describe the presenting complaint using the present tense [+here-and-now] as well as provide no or limited information on location or spatial references [+few elements]. This descaling process of the task could also conform to Step 2 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

In the **during-the-examination phase**, the task is simple along the resource-directing phase; however, it can be descaled further by providing less information [+few elements]. The task can be further descaled along the resource-dispersing dimensions. This can be done for example the participant in the role of the doctor could be required to perform only a single task [+single task]. The **post-examination segment** consists of a task that can be descaled by including no elements of reasoning [+ no reasoning] and less information provided [+few elements]. Furthermore, the task can be made simpler along the resource-dispersing dimensions. For instance, the task could provide planning time [+ planning] for the participant as the role of the doctor. This descaling process of the task conforms to Step 2 of the SSARC model, i.e. stabilize-simplify-automatize-restructure-complexify (SSARC) Model (2010).

Syntactic complexity at sentence and clausal level

The syntactic complexity of this diagnostic phase exceeds that of the previous segment. The sentences in this **pre-examination segment** varies in terms of their syntactic complexity. Sentences in lines [17], [21] and [28] occur as simple clauses. However, the question clause in line [10] is a complex clause as it features a situative mood main clause **ngesikhathi egula** (the time she was sick) followed by a recent past tense clause **umyisile** (did you take her) and then a locative adjunct **emtholampilo** (to the clinic). The conjunction **noma** (or) introduces an infinitive complement clause **ukuyobona udokotela** (to see the doctor).

Another example of a complex compound sentence occurs in lines [12-14]. The exchange begins with an independent past tense main clause **yebo siyile** (Yes we did) then followed by another independent remote past tense clause **wamnika imithi** (they gave her medication). This clause is then followed by another compound sentence featuring a remote past tense clause **ngambona** (I saw her) with a relative adjective clause modifier **engcono impela** (getting better). The conjunction **kodwa manje** (but now) introduces a passive clause **sengixakwa** (she is not feeling well) followed by the conjunction **ukuthi** (that), which further introduces another present indicative mood complement clause **ngimbona engathi** (I see that she) that includes a negative verb clause **akaphatheki kahle** (is not well). A dependent situative mood clause is introduced by the conjunction **uma** (when), which is followed by the main verb clause **kufanele** (she has to), which takes a subjunctive mood complement clause **achame** (urinate). The last sentence features a consecutive complement verb clause **uvele akhale** (she cries) followed by another present tense complement clause **engathi umchamo uyamshisa** (saying that the urine is burning). The sentence in line [18] is another example of a complex clause. The sentence features a negative main verb **cha, angisamufaki** (no, I do not use it), followed by an adverb

of time **emini** (during the day). This is then followed by the conjunction **uma** (when), which introduces a dependent situative mood clause **elala** (she sleeps). Thereafter the conjunctions **kodwa njengoba** (but) introduces the last recent continuous verb complement clause **ebegula nje bengimfaka** (I am using it now because she is not feeling well). With predominantly complex sentences evident in this **pre-examination** segment, it therefore illustrates a high-level syntactic complexity according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

The **during-the-examination phase**, sentences such as in line [29] are also characterized as complex compound clauses. The main verb clause **ngisacela** (please) is followed a subjunctive mood complement clause **umbeke** (place her), which is further followed by a locative adjunct **embhedeni** (on the bed) and a consecutive complement verb clause **simhlole** (for an examination). This clause is followed by another compound verb clause **ngizocela** (please) also followed by a subjunctive mood complement clause **umkhumule** (take off). The last compound verb clause **ume** (stand) features a locative adverbial adjunct **eduze kwakhe** (near her) and then followed by a negative future situative mood clause **engezokhala** (she does not cry). Therefore, this phase illustrates a high-level syntactic complexity according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

In the **post-examination phase**, the sentence in lines [36-38] is also considered a highly complex sentence. The main future tense verb clause **ngizomnika umuthi** (I will give her) is followed by a possessive morpheme **wa-** in **wokutshabuka** (medication for rash) as well as the associative copulative clause **na-** in **nepanado** (and Panado). This is further followed by another dependent verb clause **kwandile** (it is common) that features a locative adjunct **ezinganeni** (in children) as well as a relative clause **ezincane** (that are little). The conjunction **ukuthi** (that) is followed by a copulative verb **zibe** (to have) with the associative copulative clause **na-** in **nenkinga** (a problem) and a relative clause **ekanje** (like this). The last clause features a locative adverbial adjunct **emveni kokuthi** (after) followed by a past passive complement clause **baphathwe yisisu** (suffering from the stomach) with the associative copulative clause **na** – in **nomkhuhlane** (and flu).

Since, this segment consists mostly of complex sentences; it therefore illustrates a high-level syntactic complexity according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

(iii). The directive phase***Cognitive complexity***

Lines [42 – 43] represent the closing session of the consultation, which is analysed by virtue of cognitive complexity in Robinson's Cognition Hypothesis (2005).

In this segment, all sentences are expressed in the present tense illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing dimension. In addition, there are no causal reasoning [+ no reasoning] and no time or spatial references [+ few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a high level of performative complexity. Here, the doctor need only to perform a single task of expressing gratitude and wishing the child full recovery, thus denoting [+ single task]. This directive is illustrated in sentence of line [43] and is familiar to the doctor hence it does not require much planning time on the doctor's part [- planning]. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. By virtue of Robinson's Triadic Componential Framework, this phase is an example of a low-level segment of performative complexity. Therefore, this phase exhibits features of category two, which is associated with low developmental and high performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

In the **directive phase**, the task is simple to perform along the resource-directing dimensions in that it requires the participant, in the role of the patient, to describe events in the present tense. No reasoning is provided and additional information not given. However, the task can be descaled along the resource-dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge]. This descaling process of the task conforms to Step 3 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This segment comprises of short monoclausal sentences. The sentence **Nihambe kahle abe ngcono umntwana** (go well, we hope the child gets better soon) in line [43] is complex as it features a potential copular verb **abe ngcono** (she gets better soon). Therefore, according to Foster et al's Analysis of

Speech Unit Model (2000) discussed in Section 4.3, this segment characterizes a relatively low level of syntactic complexity.

Syntactic complexity at phrasal level for task seven

This dialogue consists of several examples of NPs that contain nominal modifiers such as nominal and clausal relatives, descriptive and semantic possessives and demonstratives. Examples of NPs consisting of lexical heads and relatives are evident in lines [2], [7] and [37]. The noun phrase in line [2] **umntwana wami ongixakayo** (my child who has a problem) is an example of a clausal relative whereas noun phrases in lines [7] **unezinyanga eziyishumi nane** (she is 14 months) and [37] **ezinganeni ezincane** (in small children) are examples of nominal relatives. Examples of NPs consisting of a semantic possessive are evident in line [2] **umntwana wami** (my child) and a descriptive possessive in line [4] **inkinga yengane** (problem of the child). The noun phrase **nale nkinga** (with this problem) in line [26] is an example of a phrase containing the demonstrative **le** (this). In terms of the noun phrases described above, these are categorised as complex as the noun phrases consist of a lexical head with a modifier (i.e. nominal and clausal relatives, descriptive and semantic possessives and demonstratives clauses) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) which has been discussed in section 4.3.1.

4.5.8 Task descriptor 8

Isiguli sowesifazane sivakashela esibhedlela, sikhala ngobuhlungu ngaphansi kwesisu. Futhi sizwa ubuhlungu uma sichama. Njengodokotela osemsebenzini, sibuze ukuthi inkinga yaso iqale nini nokuthi sike sabonana yini nodokotela ngaphambilini. Sibuze ukuthi kukhona yini esinye isifo esisiphethe. Sazise isiguli ukuthi uzosihlola nokuthi uzosinikeza imithi. Vala ingxoxo yakho ngendlela efanele.

A female patient visits the hospital, complaining of pain in the lower abdomen. She also feels pain when urinating. As the doctor on duty, enquire when did her problem begin and if she has seen the doctor before. Ask her if there are any other illnesses, she may be suffering from. Inform her that you will be examining her and that you will be giving her some medication. Conclude the consultation appropriately.

4.5.8.1 Dialogue 8

D = Doctor

P = Patient

[Language functions]

- D: Sawubona sisi unjani? Ilaphi inkinga? (*Hello how are you? How can I help you?*) (2)
[Greeting], [Offering assistance]
- P: Yebo dokotela! Dokotela nginenkinga uma ngiphiswe ukuchama kuba buhlungu esinyeni, umchamo uphuma kabuhlungu kanti futhi ngichama njalo. (*Yes hello doctor! Doctor, I have a problem when I urinate, I feel pain in my lower abdomen, I feel pain when I urinate and I am passing urine often.*) (6)
[Description of problem]
- D: Kuqale nini? (*When did it start?*) (7)
[Enquiry about onset of problem]
- P: Kuqale ngeviki elidlule. (*It started last week.*) (8)
[Response to when problem commenced]
- D: Unayo 'i-discharge'? Kukhona yini into engcolile ephumayo? (*Do you have any discharge? Is there anything coming out? (Lit. is there anything dirty coming out = vaginal discharge)*) (11)
[Enquiry about further symptoms]
- P: Cha kodwa umchamo wami uyanuka. (*No but my urine is offensive.*) (12)
[Response regarding other symptoms]
- D: Kusake kwakuphatha phambilini? (*Have you ever had this problem before?*)
[Asking about previous problems]
- P: Yebo kodwa ngixakwa ukuthi kwakusheshe kuziphelele, ngizizwa ngigula kakhulu, ngikhathele kanti futhi ngiphethwe yiqolo. (*Yes but it disappeared early, now I feel sick, I am tired and there is a pain in my back.*) (16)
[Response concerning past and current problem]
- D: Awukaze wayobona udokotela ngalenkinga ngaphambilini? (*Did you go to see the doctor about this problem before?*) (18)
[Enquiry regarding previous visit to the doctor]

P: Cha ngoba yinto ejwayele ukungiphatha kodwa futhi iyashesha ukuziphelela angize ngigule kanje. (*No because it is something usual and it comes and goes, I do not get sick like this*). (21)

[Explanation regarding why there was no previous visit to doctor]

D: Awunaso esinye isifo mhlawumbe esingabanga lokhu? (*Do you have any other illness that may have caused this*)? (23)

[Enquiry concerning any other disease patient may have]

P: Nginaso isifo se”HIV” kodwa benginakho ukugula kanje ngingakabi nayo. (*I have HIV but I used to get sick like this before that*). (25)

[Indication of other illness]

D: Kulungile, ngisacela ukukuhlola nje kancane, ngicela uphakamise ishibha ume ubheke le. (*Okay, can I please examine you, please move your t-shirt up and face in this direction*). (28)

[Instruction to remove T-shirt for examination]

P: Kubuhlungu impela uma unghithinta ngasesinyeni. (*It is very painful when I am touched in the lower abdomen*). (30)

[Comment on pain upon examination]

D: Ngibona engathi une-‘cystitis’. Akukubi kakhulu kodwa ngizokunika amaphilisi bese uphuze kakhulu amanzi. Sizohlola umchamo bese sizokwelapha. (*It looks like you may have cystitis. It is not that bad, I will give you some pills and you must drink lot of water. We will test the urine and then we will treat you*).

[Information on current problem], [Informing patient on medication], [Instruction to drink plenty water], [Medical procedure to follow]

P: Kulungile dokotela, ngiyabonga kakhulu. (*Okay, thank you doctor*). (35)

[Expression of gratitude]

4.5.8.2 Task complexity

Task typology – interactional complexity

Task 8 is an example of an information gap task in terms of Pica et al.’s task typology (1993). One participant holds all information that needs to be accessed by the other participant, in order to complete the task. In lines [3-25], participant X (patient) holds the information that is unknown to the other participant Y (doctor) but is needed for task completion. According to Table 2-1 (see section 2.3.4.4 in Chapter 2), the features of this task configure towards a two-way flow of information and it

corresponds to interactant relationship 1b and interactant requirement 2b. Both participants (doctor and patient) work together toward a convergent goal and a single outcome. The doctor and the patient need to obtain all the relevant information that they both do not know, i.e. the doctor needs to diagnose the medical condition and makes a prognosis and the patient needs to understand what her medical condition is. Therefore, they are also relating to the descriptions of goal orientation 3a and outcome option 4a in Table 2-1. In order to reach the convergent goal (+) and the single outcome (1) of the task, interaction is required (+), according to Table 2-2 (Pica et al., 1993) (see section 2.3.4.4 in Chapter 2).

(i). The introductory phase

Cognitive complexity

Lines [1- 8] constitute the introductory phase or the initiating the session phase. These sentences are analysed in terms of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimension.

The communication in this **introductory segment**, which takes place between the doctor and patient in lines [1-8] is conveyed using the present tense and one example with the past tense. Thus, representing the [- here-and-now] feature of Robinson's developmental complexity. These sentences consist of simple sentences and does not include any causal reasoning, hence representing the [+ no reasoning] feature. A few references are given to time and space in this dialogue; which occur in sentence of line [8] **ngeviki elidlule** and an example of spatial locational reference is found in sentence of line [4] **esinyeni**. These examples indicate the [- few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a high-level segment of developmental complexity.

This segment does not represent a single task example as it contains the task of greeting, asking after well-being and enquiry about the onset of the problem. However, the content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- single task], [- planning] and [- prior knowledge] along the resource-dispersing dimension of Robinson's Cognition Hypothesis, which illustrates a high level of performative complexity and low developmental complexity. Based on the features exhibited above, this phase can be classified as a category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential

Framework based on his Cognition Hypothesis (2005) illustrating a high performative and high developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **introductory phase** is complex to perform along both the resource-directing and dispersing dimensions. It requires the participant, in the role of the patient, to describe the presenting complaint in the past tense. While no element of reasoning are provided, more information on spatial locational references are given. In terms of the SSARC model, this task can be descaled along the resource-directing dimensions. The presenting complaint could be provided using the present tense. Providing less information could be included to this task. Along the resource-dispersing dimensions, the task can be descaled where the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform only a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this introductory phase of dialogue 8, simple mono-clausal sentences are evident in lines [1], [7] and [8]. However, lines [3-4] contain a complex sentence. The main clause features the associative copulative clause **na- ngingenkinga** (I have a problem) followed by the conjunction **uma** (when), which introduces a passive complement clause **ngiphiswe** (I urinate) followed by an infinitive **ukuchama** (I urinate). This is then followed by another complement clause featuring the copulative verb **kuba buhlungu** (it becomes painful) and then a locative adjunct **esinyeni** (in the lower abdomen). The last complement verb clause **uphuma** (it passes) is followed by an adverbial phrase **kabuhlungu** (painfully) and then the conjunctions **kanti futhi** (and) introduces a dependent indicative mood clause **ngichama njalo** (I urinate a lot).

Since this segment comprises mostly simple mono-clausal sentences, it illustrates a low level of syntactic complexity, according to Foster et al.'s Analysis of Speech Unit Model (2000).

(ii). The diagnostic phase of questioning, instructing and explaining

Cognitive complexity

Lines [9-17] constitute the the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's cognitive complexity model (2005).

In the **pre-examination phase** of the segment; sentences of lines [9] – [25], most of the communication between the doctor and the patient is performed in the present tense, with some references to the past events, thereby illustrating the [- here-and-now] dimension. The reasoning demands of this segment are simple with one example **ngoba** (because) given in sentence of line [19], thus representing the [- no reasoning] feature of the developmental complexity. There are no temporal and spatial locational references evident within this phase of the dialogue, thus indicating the [+ few elements] feature of development complexity. Therefore, this segment of the dialogue is an example of a high level of developmental complexity.

Furthermore, this segment demonstrates a high performative level of complexity. During this segment of the dialogue, the doctor is required to perform multiple tasks simultaneously. The doctor has to listen attentively to the patient, draw on prior knowledge and rephrase or formulate more questions. Moreover, these tasks will need to be performed by the doctor within a limited timeframe. Therefore, this segment represents the following performative complexity features, i.e. [- single task], [- prior knowledge] and [- planning]. With both the developmental and performative features taken into consideration, this phase represents the characteristics that fall in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and high developmental complexity.

The **during-the-examination phase**, as indicated in sentences [26-30], entails the diagnostic instruction by the doctor. This communication takes place in the present tense, thus denoting the [+here-and-now] dimension. There is no evidence of causal reasoning indicated. This segment represents the [+ no reasoning] feature of the developmental complexity. There is a single example of a spatial locational reference in the sentence of line [29] **ngasesinyeni** (in the lower abdomen), thereby indicating the [- few elements] feature of development complexity, thus representing a low level of developmental complexity.

This segment further describes the doctor having to perform multiple tasks simultaneously which indicates the [- single task] feature. These tasks include requesting permission to examine the patient, physically examining the problem area (in this case the lower abdomen), drawing on prior knowledge and formulating a diagnosis. The feature of [+ prior knowledge] would be illustrated here as well as [+ planning] since the doctor has the time to perform and plan other tasks whilst examining the patient. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment describes mostly features of category one, which relates to low developmental and low performative complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The **pre-examination phase** is also considered a complex task as communication demands are placed the participants. The task requires the participants to narrate events that happened in the past and includes elements of reasoning. It also requires participants to perform multiple tasks with no prior knowledge or planning time provided. In order to descale this task, according to the SSARC model, the participant in the role as the doctor could be given planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. In addition, the participant in the role as the patient could be required to describe the presenting complaint in the present tense [+here-and-now] as well as provide less information on location or spatial references [+few elements]. This task too, conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

In the **during-the-examination phase**, the task is simple along the resource-directing phase however, less information could have been provided [+few elements]. The task can be further descaled along the resource-dispersing dimensions, which could require the participant in the role of the doctor to perform only a single task [+single task].

Syntactic complexity at sentence and clausal level

In this **pre-examination** segment of the dialogue, many of the questions and answers between the doctor and patient exhibit high-level syntactic complexity. A selection of these sentences are analysed as follows. The sentence in lines [14-15] in the pre-examination phase of the dialogue exemplifies a complex sentence. The response expressed in **Yebo kodwa ngixakwa ukuthi kwakusheshe kuziphelele, ngizizwa ngigula kakhulu, ngikhathele kanti futhi ngiphethwe yiqolo** (Yes but it disappeared early, now I feel sick, I am tired and there is a pain in my back) consists of a several compound sentences. It begins with a simple mono-clausal **yebo** (yes) followed by the conjunction **kodwa** (but), which introduces a present indicative mood clause **ngixakwa** (it disappeared) followed by a consecutive complement verb **kwakusheshe kuziphelele** (it disappeared early). This is then followed by an independent present indicative mood clause **ngizizwa ngigula kakhulu** (now I feel sick) that features a complement verb clause **ngikhathele** (I am tired) followed by the conjunctions **kanti futhi** (and), which is further followed by a passive complement clause **ngiphethwe yiqolo** (I have back pain).

The sentence in line [19-20] consists of a simple main clause **cha** (no) followed by a conjunction **ngoba** (because), which introduces a copular clause **yinto** (it is something) followed by a relative clause **ejwayele** (common) and then by an infinitive complement clause **ukungiphatha** (that I have).

The conjunctions **kodwa futhi** (and) introduces a present indicative main clause **iyashesha** (it comes and goes) followed by an infinitive complement clause **ukuziphelela** (it finishes) and the further followed by a subordinate negative verb clause **angize ngigule kanje** (I do not get sick like this). The sentence, expressed in line [22], **Awunaso esinye isifo mhlawumbe esingabanga lokhu** (do you have any other disease that may have caused this), and the main clause takes on a negative clause with the associative copulative clause **na-** in **awunaso** (do you have), followed by a relative clause **esinye** (any other). This is further followed by a negative relative clause, featuring the potential morpheme **nga-** in **esingabanga** (that may have caused).

Therefore, as illustrated in this **pre-examination phase**, a high level of syntactic complexity is applicable, according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

The sentence in lines [26-27] in the **during-the-examination phase** of the dialogue describes a complex clause. The sentence consists of a main verb clause **ngisacela** (I would like) followed by an infinitive complement clause **ukukuhlola** (to examine you). This is then followed by another independent main clause **ngicela** (I would like) that is followed by a complement clause **uphakamise** (you to move up). This is further followed by a consecutive complement verb clause **ume ubheke le** (face in this direction).

From the analysis above it can deduced that this segment illustrates a high level of syntactic complexity, according to Foster et al's Analysis of Speech Unit Model (2000), discussed in Section 4.3 of this chapter.

(iii). The directive phase

Cognitive complexity

Lines [31 – 35] represent the closing session of the consultation, which is analysed in terms of Robinson's cognitive complexity model (2005).

In this segment, all sentences are expressed in the present and future tenses illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing dimension. In addition, there are no causal reasoning [+ no reasoning] nor is there any spatial references [+ few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a low level of performative complexity. Lines [31] and [32] indicate the doctor prescribing medication and suggesting patient to drink plenty fluids, thus denoting [- single task]. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. No planning is required during this phase [- planning]. By virtue of Robinson's Triadic Componential Framework (2005), this phase is an example of a low-level segment of performative complexity. Therefore, it can be deduced that this phase falls into category two, which is associated with low developmental and low performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The **directive phase** of this target task is a simple task along the resource-directing dimensions. However, the task can be descaled along the resource-dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform a single task [+single task]. This descaling process of the task conforms to Step 2 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this segment of the dialogue, the first sentence in line [31] is a simple sentence expressing a potential prognosis. The sentence in line [35] is also an example of a simple sentence expressing agreement. However, the sentences in lines [31-32] are complex sentences. The sentence in line [31] **Akukubi kakhulu kodwa ngizokunika amaphilisi bese uphuze kakhulu amanzi** (it is not bad, I will give you some pills and you must drink a lot of water) consists of three clauses. The main negative copular adjectival clause **akukubi** (it is not bad) is followed by the conjunction **kodwa** (but), which is further followed by a future indicative mood clause **ngizokunika** (I will give you). The conjunction **bese** (and then) then introduces a complement indicative mood clause **uphuze** (you must drink).

This segment consists of predominantly simple clauses hence it describes a low level syntactic complexity, according to Foster et al's Analysis of Speech Unit Model discussed in Section 4.3 of this chapter.

Syntactic complexity at phrasal level for task eight

This dialogue contains a few examples of NPs containing modifiers with reference to clausal relatives and demonstratives. The noun phrases **ngeviki elidlule** (week that has passed) in line [8], **into engcolile ephumayo** (anything 'dirty' that is coming out) in line [9] and **yinto ejwayele** (it is

something usual) are examples of clausal relatives. An example of a noun phrase with a demonstrative is provided in line [17] **ngale nkinga** (about this problem).

Despite describing a few examples of noun phrases in this dialogue, they are considered complex because the noun phrases consist of a lexical head with a modifier (i.e. clausal relatives and demonstrative clauses) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) discussed in section 4.3.1.

4.5.9 Task descriptor 9

Isiguli sowesifazane esineminyaka engama-46 size esibhedlela sikhala ngobuhlungu esifubeni. Futhi sinenkinga yehayihayi kusukela sineminyaka engama-26. Size lapha ukuzohlolwa ngenkinga yaso yamanje. Nguwe udokotela osemsebenzini esibhedlela. Xoxa nesiguli lesi futhi ubuze ngobuhlungu nezinye izimpawu ezihambisana nalobu buhlungu. Sibuze ukuthi kunemithi noma imbiza esiyisebenzisayo. Sibuze ngomlando womndeni waso nemikhuba esiyijwayele emphakathini. Sazise isiguli ukuthi uzosihlola bese uvala ingxoxo ngendlela efanele.

A 46-year old female patient has come to the hospital complaining about the pain in her chest. She also has had high blood pressure since she was 26 years old. She came here to check on her current problem. You are the doctor on duty at the hospital. Interview this patient and enquire about the pain and other associated symptoms. Enquire if she is on any medication or herbal mixtures. Ask her about her family history and social habits. Inform the patient that you will examine her and conclude the consultation appropriately.

4.5.9.1 Dialogue 9

D = Doctor

P = Patient

[Language functions]

D: Sawubona mama, unjani? (*Hello, how are you?*) (1)

[Greeting], [Enquiry about well-being]

P: Ngiyaphila wena unjani? (*I am fine, how are you?*) (2)

[Response about health]

D: Ngiyaphila nami, ulethwa yini esibhedlela? (*I am also fine, what brings you to hospital?*) (4)

[Enquiry about patient's visit to the hospital]

- P: Emahoreni amabili adlule ngiqalwe ubuhlungu lapha esifubeni sami, bekungathi kukhona umuntu ongicindezelayo. Emva kwemizuzu ewu-20 kwaphela lobu buhlungu. Ngize esibhedlela ukuzobheka ukuthi ibangwa yini yonke lento. (*In the past two hours, I am feeling pain in my chest; it is as if someone is pressing me. After 20 minutes, there was no pain. I am here to check what is the cause of all this*). (10)
[Description of pain]
- D: Ubuhlungu kuphela okukulethe esibhedlela? (*Is it only pain that brings you here?*)(12)
[Asking about any other reason for hospital visit]
- P: Yebo dokotela. (*Yes doctor*). (13)
[Agreement]
- D: Ubuwenzani ngesikhathi kuqala lobu buhlungu? (*What were you doing the time this pain started?*) (15)
[Enquiry about patient's activities during onset of pain]
- P: Bengihamba ngiya ekhaya. (*I was walking home*). (16)
[Response]
- D: Ngesikhathi ufika ekhaya wenzeni? (*When you reached home, what did you do?*) (18)
[Asking about what was done upon arriving home]
- P: Ngifike ngahlala phansi, ngaphuza amanzi kwase kwabangcono. (*I got there, sat down, drank water and then it got better*). (20)
[Comment on what was done when patient got home]
- D: Uma uhleli ungenzi lutho buyaphela ubuhlungu? Uma kukhona okwenzayo buyaqala? (*If you sit down and do nothing is there any pain? Is there something that you do that precipitates the pain?*) (23)
[Follow-up questions about what precipitates the pain]
- P: Yebo. (*Yes*). (24)
[Agreement]
- D: Ngicela ungitshela ngesinhlungu onazo, ukuthi zinjani futhi kukhona lapho okubuhlungu khona ngaphandle kwesifuba? (*Please tell me about the pain you have, how is it? Is there any other place you feel pain other than the chest?*)
[Asking for location of pain]
- P: Yebo, ngesikhathi kubuhlungu bengizwa ngathi khona into engicindezelayo esifubeni iphinde iye ngasengalweni yangakwesobunxele nasentanyeni. (*Yes the time I feel pain it like something that is pressing me on my chest and goes to my left arm and into my neck*). (31)

[Giving information on the radiation of pain]

D: Azikho ezinye izinkinga obunazo ngaphandle kwale? (*Do you have any other problem other than this one?*) (33)

[Enquiry about any other problem]

P: Bengijuluka kodwa futhi nginesiyazi. (*I was sweating and feeling dizzy.*) (34)

[Description of other symptoms]

D: Akhona amaphilisi owaphuzayo? (*Are there any pills that you are taking?*) (35)

[Asking about medication]

P: Akhona awe-BP. (*I take BP medication.*) (36)

[Response about medication]

D: Uyakhumbula ukuthi yakuqala nini i-BP? (*Do you remember when you started taking BP medication?*) (38)

[Enquiry about duration of intake of medication]

P: Yebo, ngangineminyaka engu-28. (*Yes, I was 28 years old.*) (39)

[Response regarding duration of medication]

D: Awekho amanye amaphilisi owadlayo noma umuthi wesintu owawuthola enyangeni? (*Are there any other pills you are taking or any muthi from the traditional healer?*) (42)

[Enquiry regarding any other medication intake or medication from a traditional healer]

P: Kukhona, bengiphathwa ikhanda elingapheli ngaya enyangeni yanginikeza izinto zokuphuza. (*There is, I had a headache and went to see the herbalist and he gave me something to drink.*) (45)

[Response about medication from traditional healer]

D: Ngiyezwa mama, uyazivocavoca? (*I hear you do you exercise?*) (46)

[Asking about exercise]

P: Cha dokotela angikaze ngizame. (*No doctor I have not tried it before.*) (47)

[Response regarding exercise]

D: Emndenini kukhona oke waba nalenkinga? (*In your family, is there anyone who has this problem?*) (49)

[Asking about family history]

P: Cha akekho kodwa obhuti bami nabo banayo i-BP. (*No but my brothers they have BP.*) (51)

[Response regarding family history]

D: Uyabhema noma uyaphuza? (*Do you drink or smoke?*) (52)

[Enquiry about social habits]

- P: Ngiyaphuza kodwa angibhemi. (*I do drink but I do not smoke*). (53)
 [Response regarding social habits]
- D: Akukaze kwenzeke ukuthi ulale esibhedlela noma uhlinzwe? (*Have you ever been admitted to the hospital or had an operation?*) (55)
 [Asking about previous medical history]
- P: Cha. (*No*). (56)
 [Response]
- D: Kulungile, iyona imibuzo enginayo lena. Asihambe siyobheka ukuthi yini inkinga. (*It is fine I have only these questions. Let us examine you and see what the problem is*).
 [Informing patient about examination]
- P: Kulungile dokotela (*It is fine doctor*). (60)
 [Agreement]

4.5.9.2 Task complexity

Task typology – interactional complexity

Dialogue 9 is an example of a predominantly information gap task according to Pica et al.'s task typology (1993). One participant (patient) holds information that is unknown to the other participant (doctor), but needs to know in order to complete the task. The required information is needed in order for the doctor to diagnose the patient's medical condition. The task involves a two-way flow of request and supply of information. One participant Y (doctor) requests the information, while the other participant X (patient) supplies the information. These features correspond to interactant relationship 1b and interaction requirement 2b according to Table 2-1 (see section 2.3.4.4 in Chapter 2). Further, both participants (doctor and patient) work to achieve a convergent goal, namely, to supply and get much information as possible about the medical condition and a single outcome that is to make a prognosis and determine a plan forward. Thus, this meets the descriptions of goal orientation 3a and outcome option 4a in Table 2-1, where only one acceptable outcome is possible. In order to reach a convergent goal (+) and single outcome (1) of the task, interaction is required (+), according to Table 2-2 (see section 2.3.4.4 in Chapter 2).

(i). **The introductory phase**

Cognitive complexity

Lines [1- 7] constitute the introductory phase or the initiating the session phase. These sentences are analysed by virtue of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimension.

The communication in this **introductory segment** takes place between the doctor and patient in lines [1-7] and is conveyed using both the present and past tenses. Thus, representing the [- here-and-now] feature of Robinson's developmental complexity. Sentences including temporal references are evident in lines [5] **emahoreni amabili** (in the two hours) and [6] **emva kwemizuzu ewu-20** (after 20 minutes) and spatial locational references are illustrated in sentences of lines [3] and [7] **esibhedlela** (to the hospital) and [5] **esifubeni** (in the chest). These examples indicate the [- few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). This dialogue contains no reasoning, thus, it has the feature [+ no reasoning]. Therefore, this phase is an example of a high-level segment of developmental complexity.

This segment does not represent a single task example as it contains the task of greeting, asking after well-being and enquiry about the hospital visit. However, the content of the dialogue is familiar to the doctor in that, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. This segment therefore displays the characteristics of [- single task], [- planning] and [- prior knowledge] along the resource-dispersing dimension of Robinson's Cognition Hypothesis. Thus, this phase exhibits features that fall in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework based on his Cognition Hypothesis (2005) illustrating a high performative and high developmental levels of complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **introductory phase** is complex to perform along both the resource-directing and dispersing dimensions. It requires the participant, in the role of the patient, to describe events using the past tense. Although there are no elements of reasoning, few elements relating to time and space are given. In terms of the SSARC model, this task can be descaled along the resource-directing dimensions. The events could be provided using the present tense. This task could provide less information relating to spatial and locational references. The task can also be descaled along the resource-dispersing dimensions, where the participant in the role as the doctor could be given planning

time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This segment of the dialogue consists of mostly short mono-clausal sentences. These are evident in sentences from lines [1-3]. However, the sentences in lines [5-7] comprise of compound clauses. For example, the sentence in line [5] consists of a main clause featuring a locative adjunct **emahoreni** (in hours) followed by a relative clause **amabili** (that are two). This is then followed by a passive complement clause **ngiqalwe** (I am feeling) followed by a locative adjunct **esifubeni** (in the chest). The last clause contains a past participial situative mood clause **bekungathi** (it was as if) followed by a relative clause **ongicindezelayo** (someone is pressing me). The sentence in line [7] starts with a recent past indicative mood main clause **ngize** (I came) followed by a locative adjunct **esibhedlela** (to the hospital) and then further followed by an infinitive complement clause **ukuzobheka** (to check). The conjunction **ukuthi** (that) introduces a passive complement clause **ibangwa** (cause) followed by a demonstrative pronoun **lento** (this thing).

As indicated, this segment comprises of predominately short, therefore it illustrates a low level syntactic complexity, according to Foster et al's Analysis of Speech Unit Model discussed in Section 4.3 of this chapter.

(ii). The diagnostic phase of questioning, instructing and explaining

Cognitive complexity

Lines [11-56] constitute the the diagnostic phase of questioning, instructing and explaining and is analysed in terms of Robinson's cognitive complexity model (2005).

During the **pre-examination phase** of the segment, the communication between the doctor and the patient is performed using both the present and past tenses, thereby illustrating the [- here-and-now] dimension. The reasoning demands of this segment are simple since the sentences do not consist of any logical subordinators to indicate causal reasoning, thus representing the [+ no reasoning] feature of the developmental complexity. There are many spatial locational references evident within this phase of the dialogue. Spatial references occur in sentences of lines [11], **esibhedlela** (to hospital), [16-17] **ekhaya** (at home), [29] **esifubeni** (in the chest), **ngasengalweni** (on the arm), **nasentanyeni** (into the neck), [41-43] **enyangeni** (to the herbalist) and [48] **emndenini** (in the family). These features

also indicate the [-few elements] feature of developmental complexity, thus representing a high level of developmental complexity.

Furthermore, this segment demonstrates a high performative level of complexity. During this segment of the dialogue, the doctor is required to perform multiple tasks simultaneously. The doctor has to listen attentively to the patient, draw on prior knowledge, rephrase or formulate more questions and reach a shared decision as to how to proceed. This segment consists of many enquiries where the doctor is required to enquire about family history, past medical history and any consults with a traditional healer. Moreover, these tasks will need to be performed by the doctor within a limited timeframe. Therefore, this segment represents the performative complexity features of [- single task], [- prior knowledge] and [- planning]. With both the developmental and performative features taken into consideration, this phase represents the characteristics that fall in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework based on his Cognition Hypothesis illustrating a high performative and high developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The **pre-examination phase** is a complex task as it places communication demands on the participants. The task requires participants to describe events that happened in the past, at different places and times. It also requires participants to perform multiple tasks with no prior knowledge or planning time given. According to the SSARC model, this task can be descaled in that the participant in the role as the doctor could be given planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. Furthermore, the participant in the role as the patient could be required to describe the presenting complaint in the present tense [+here-and-now] and provide less information on location or spatial references [+few elements]. This task could also conform to Step 1 of the SSARC model (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this segment of the dialogue, a combination of both short and complex clauses occur in lines [11-16, 24, 35-39, 46-48] consist of simple mono-clausal questions and answers between the participants. In the complex sentences that follow several examples of multiple clauses are evident. A selection of these complex sentences are analysed as follows.

In line [19], the sentence starts with a recent past tense indicative mood main clause **ngifike** (I got here) followed by a remote past tense clause **ngahlala** (sat down), and then by a situative complement

clause, indicating simultaneous action **ngaphuza** (I drank water). The last complement clause features the copulative verb **kwaba ngcono** (it got better). The sentence in line [25], the main verb clause **ngicela** (please) is followed by a complement clause **ungitshela** (you tell me). This is followed by an instrumental **nga- ngesinhlungu** (about the pain) and then by a relative with the associative copulative clause **na- onazo** (that you have). The conjunction **ukuthi** (that) introduces a question clause **zinjani** (describe it), which is then followed by another conjunction **futhi** (and) consisting another complement clause featuring a relative clause **okubhlungu** (that which is painful) as well as an adverbial clause of place **ngaphandle kwesifuba** (aside from the chest).

Another example of a complex sentence occurs in line [28]. The sentence starts with the situative mood clause **ngesikhathi** (at the time) followed by a recent past tense indicative complement clause **bengizwa** (I felt it). This is then followed by potential mood complement clause **ngathi** (like) featuring a relative clause **engicindezelayo** (that is pressing me) and a locative adjunct **esifubeni** (in the chest). Another complement clause starts with the deficient verb **iphinde** (it recurs) followed by a subjunctive complement verb **iyi** (it goes). This is then followed by the instrumental **nga-** with a locative adjunct **ngasengalweni** (to the arm) followed by a possessive concord **ya- yangakwesobunxele** (on the left) as well as the associative copulative clause **na-** with a locative adjunct **nasentanyeni** (in the neck). The sentence in line [40] consists of a main negative clause **awekho** (are there any) followed by the relative clauses **amanye amaphilisi** (other pills) and **owadlayo** (you are taking). The conjunction **noma** (or) introduces a relative past tense complement clause **owawuthola** (that you got) followed by a locative adjunct **enyangeni** (from the traditional healer). The last example of a complex clause is evident in the sentence in line [43], which starts with a present tense indicative mood clause **kukhona** (there is). This is followed by a recent past tense passive complement clause **bengiphathwa ikhanda** (I had a headache) that is followed by a relative clause **elingapheli** (that did not end). The last complement clause features the remote past indicative mood **ngaya** (I went), followed by a locative adjunct **enyangeni** (to the traditional healer) and then further followed by a past tense complement clause **yanginikeza izinto** (he gave me something) featuring a possessive **za- zokuphuza** (to drink) with an infinitive verb.

The number of complex sentences in this segment exceeds that of the simple sentences. Hence, this segment characterises a high level of syntactic complexity, according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

(iii). The directive phase*Cognitive complexity*

Lines [57 – 60] represent the closing session of the consultation, which is analysed by virtue of Robinson’s (2005) cognitive complexity model.

In this segment, all sentences are expressed in the present tense illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing variable. In addition, there are no causal reasoning [+ no reasoning] nor is there any spatial references [+ few elements] evident in this segment. Therefore, according to Robinson’s Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a low level of performative complexity. Lines [57] and [59] describes the doctor informing the patient about the examination to follow, thus denoting just a single task needed to be carried out [+ single task]. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. No planning is required during this phase [- planning]. By virtue of Robinson’s Triadic Componential Framework (2005), this phase is an example of a low-level segment of performative complexity. Therefore, it can be deduced that this phase falls into category two, which is related to low developmental and high performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson’s Dimensions of Complexity Model.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The **directive phase** consists of a simple task to perform along the resource-directing dimensions, as it requires the participant, in the role of the patient, to describe events using the present tense. The task does not require elements of reasoning or additional information to be provided. However, the task can be descaled along the resource-dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge]. This descaling process of the task conforms to Step 2 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this segment, sentence in line [57] is a complex clause, which features a subjunctive mood main clause **asihambe** (let us) followed by future tense indicative mood complement clause **siyobheka** (examine). The conjunction **ukuthi** (that) introduces a question clause **yini inkinga** (what is the

problem). This segment therefore exhibits a high-level syntactic complexity in terms of Foster et al's Analysis of Speech Unit Model discussed in Section 4.3 of this chapter.

Syntactic complexity at phrasal level for task nine

This dialogue contains a number of examples referring to noun phrases (NP's) with nominal modifiers that include nominal and clausal relatives, numerals, quantifiers ('all/whole'), demonstratives, emphatic pronouns and semantic possessives. A few selected examples of these NP's are described hereafter. The NP in line [5] includes a nominal relative clause with numerals, **emahoreni amabili** (in the two hours). Examples of clausal relatives are evident in line [28] **into engicindezelayo** (something that is pressing me), line [35] **amaphilisi owaphuzayo** (pills that you are taking) and line [57] **iyona imibuzo enginayo lena** (I only have these questions). Line [57] also contains an emphatic pronoun **iyona** and a demonstrative **lena**. Other examples of demonstratives are provided in lines [6-7] **lobu buhlungu** (this pain) and **yonke lento** (all this). **Yonke** is also an example of a quantifier. Semantic possessives are evident in line [5] **esifubeni sami** (in my chest) and in line [50] **obhuti bami** (my brothers).

The selection of noun phrases described above are realised as complex because the noun phrases consist of a lexical head with a modifier (i.e. nominal and clausal relatives, numerals, quantifiers ('all/whole'), demonstratives, emphatic pronouns and semantic possessives) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) discussed in section 4.3.1.

4.5.10 Task descriptor 10

Umuntu omdala wesilisa onesifo sikashukela uza esibhedlela ngoba enezilonda ezinyaweni. Akakaze abone udokotela ngale nkinga ngoba wayecabanga ukuthi kuzozipholela. Manje, unyawo lwakhe selushintsha umbala, yingakho esefuna usizo. Usemsebenzini esibhedlela ngesikhathi unesi eletha leli khehla kuwe. Buza ngokudala ukuthi unyawo lwakhe lushintshe umbala lube mnyama. Mbuze ngomlando womndeni wakhe. Mazise ukuthi kuzodingeka uhlole igazi lakhe ukuze uqinisekise ukuthi unesifo sikashukela. Mazise futhi ukuthi kuzofanele ahlinzwe ukuze kukhishe leso silonda. Mazise ukuthi ngeke aye enyangeni manje ngoba isimo sonyawo lwakhe asisihle kakhulu.

An elderly man suffering from diabetes comes to hospital because he has sores on his feet. He did not see a doctor about this problem because he thought it was going to heal by itself. Now the leg is changing colour that is why he is seeking help. You are on duty at the hospital when the nurse brings the old man to you. Enquire about what lead to his leg turning black. Ask him about his family history.

Inform him that you will have to do a blood test to confirm if he is diabetic. Also, inform him that he will have to undergo surgery to remove the sore. Tell him that he cannot go to the traditional healer now because his leg is in a serious condition.

4.5.10.1 Dialogue 10

D = Doctor

P = Patient

[Language functions]

D: Sawubona baba unjani? (*Hallo, how are you?*) (1)

[Greeting], [Asking after well-being]

P: Ngiyancenga dokotela, yiwo nje umlenze. (*I am fine doctor, just my leg.*) (2)

[Response to well-being], [Presenting complaint]

D: Hawu, uwenzenjani umlenze? (*What is happening to your leg?*) (3)

[Follow-up questions about patient's leg]

P: Uvele washintsha waba mnyama. (*My leg turned black.*) (4)

[Description of the problem]

D: Hawu uvele waba mnyama nje? (*Oh! It just turned black like that?*) (5)

[Asking about condition of leg]

P: Cha, uqale emva kokuba ngiklwebheka kancane emveni kwesikhathi kwaphuma ubovu, besekwaba engathi kuba ngcono kodwa emva kwezinsuku ezimbili kwaqala kwashintsha umbala. Uma ngivuka namhlanje usumnyama futhi ubuhlungu. (*No, it started when I had a scratch after the pus came out, it got better but after two days it started to change colour. When I woke up today, it is black and painful.*) (11)

[Confirmation], [Further explanation of condition of leg]

D: Unesifo sikashukela yini? (*Are you diabetic?*) (12)

[Asking about diabetes]

P: Kwathiwa ushukela wami ukhuphukile ngonyaka odlule kodwa abazange bathi ngesifo sikashukela. (*They said my sugar level was high last year, but they did not say I am diabetic.*) (15)

[Responding about the disease]

D: Emveni kokuba bekutshela lokho awuzange ugule yini? (*After that, did you not get sick?*) (17)

[Asking if patient did not get ill]

- P: Kona ngike ngagula kancane, ngehla kakhulu emzimbeni kodwa ngidla kakhulu futhi ngichama njalo. Ngabe sengiya enyangeni yami yanginika umuthi ngaba ngcono. *(I did get sick but not that much, I lost weight but I was eating a lot and I was urinating often. I then went to my herbalist, he gave me herbal medication and I got better).* (22)
 [Description of other symptoms], [Response about medication from traditional healer]
- D: Ukhona yini emndenini owake waphathwa isifo sikashukela? *(Is there anyone else in your family who is diabetic)?* (24)
 [Enquiry regarding family history with diabetes]
- P: Yebo, umama wami naye wayephethwe yilento engiphethe futhi ngibona engathi nezingane zami ziphuza amaphilisi alesifo. *(Yes, my mother was diabetic, my children are diabetic, and they are taking medication).* (27)
 [Confirmation of disease on family members]
- D: Baba ngibona engathi nawe unaso isifo sikashukela kodwa kuzomele sithathe igazi khona sizoqinisekisa futhi ngibona sengathi kuzomele sihlinze unyawo khona isilonda singeke sibolise umlenze wonke. *(I see that you are also diabetic but we have to take the bloods to confirm, I think we will have to perform surgery so that the sore (the problem) will not affect your whole leg).*
 [Informing patient about his condition], [Informing patient to do blood test], [Informing patient about possible surgery on leg]
- P: Ngeke ngikwazi ukuhlinzwa kuzomele ngiyobona inyanga yami. *(I cannot have the operation now I have to go see my traditional healer).* (34)
 [Disagreement about surgery], [Statement about visiting traditional healer]
- D: Ngiyewza baba kodwa kumele senze ngokuphuthuma okukhulu ngoba uma sikhula lesi silonda kungenzeka ukuthi baze badinge ukuthi bawunqamule umlenze. *(I hear you but if this problem worsens, it could necessitate leg amputation).* (38)
 [Convincing patient about the seriousness of the condition on the leg]
- P: Hhayi, ngiyewza ke dokotela. Yenza okufanele. *(Hay! I hear you doctor, do what is required).* (40)
 [Agreement from patient]

4.5.10.2 *Task complexity*

Task typology – interactional complexity

The task in dialogue 10 can be classified as mainly an information gap task in terms of Pica et al.'s task typology (1993). One participant (the patient) holds the information that is unknown to the other participant (the doctor), which he needs to know in order to complete the task. In lines 3-27, participant X (patient) holds the information that is unknown to the other participant Y (doctor). According to Table 2-1 (see section 2.3.4.4 in Chapter 2), the features of this task configure towards a possible two-way flow of information and it corresponds to interactant relationship 1b and interactant requirement 2b. Both participants (doctor and patient) work toward a convergent goal and a single outcome. The doctor and the patient want to obtain all the relevant information that they both do not know, i.e. the doctor needs to know what the cause of the patient's leg turning black was and the patient needs to know what the doctor will do to his leg. Therefore, they are also relating to the configurations of goal orientation 3a and outcome option 4a in Table 2-1. According to Table 2-2, interaction is required (+) in order to reach the convergent goal (+) and the single outcome (1) of the task.

This task, specifically lines [28 – 38] can also be classified as a decision-making task. One participant (doctor) decides a plan forward as to how to treat the patient's medical condition. Both participants (doctor and patient) have shared access to the information needed to complete the task, namely to plan shared decision-making (X=Y).

In terms of the categories proposed by Pica et al. (1993) in Table 2-1, this task relates to interactant relationship 1c and interaction requirement 2c. According to Table 2-2 (see section 2.3.4.4 in Chapter 2), the participants (doctor and patient) converge toward a single decision as their goal, i.e. to run the blood test to confirm whether patient is diabetes and and to perform surgery (+). In this scenario, interaction is not required (-), but the interactant (doctor) chose to make a decision (do the blood test and perform surgery on patient's leg).

(i). The introductory phase

Cognitive complexity

Lines [1- 4] constitute the introductory phase or the initiating the session phase. These sentences are analysed by virtue of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimension.

The greeting and asking after well-being between the doctor and patient takes place in the present tense. Thus, representing the [+ here-and-now] feature of Robinson's developmental complexity. However, the patient uses the past tense when he narrates what has happened to his leg, thereby representing the [-here-and-now] feature. There is no reasoning between the two participants (i.e. the doctor and patient) as they are simply greeting each other and the patient is presenting his problem, therefore denoting [+ no reasoning] feature. Furthermore, there are no temporal or spatial locational references within this segment of the dialogue. Thus, representing the [+ few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a low-level segment of developmental complexity.

This segment does not represent a single task example as greetings take place, asking after well-being and the patient is presenting his complaint. Therefore, it represents [- single task] feature along the resource-dispersing dimension. No planning is necessary on the part of the doctor because they are simply greeting each other, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- single task], [- planning] and [- prior knowledge] along the resource-dispersing dimension of Robinson's Cognition Hypothesis, which illustrates a high level of performative complexity and low developmental complexity. Thus, this phase exhibits features that fall predominately in category two according to Table 4-1 of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis, illustrating a high performative and low developmental complexity (see Section 4.2.3).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **introductory phase** is simple to perform along the resource-directing dimensions in that it requires the participant, in the role of the patient, to describe events in the present tense. Neither elements of reasoning nor few elements are provided. However, the task can be descaled along the resource-dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform only a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This segment comprises of short questions and answers between the participants. Sentences in lines [1-4] are realised as simple mono-clausal sentences. This segment therefore, describes a low-level

syntactic complexity in terms of Foster et al's Analysis of Speech Unit Model discussed in Section 4.3 of this chapter.

(ii). **The diagnostic phase of questioning, instructing and explaining**

Cognitive complexity

Lines [5-27] constitute the the diagnostic phase of questioning, instructing and explaining and is analysed in terms of Robinson's cognitive complexity model (2005).

During the **pre-examination phase** of the segment, the communication between the doctor and the patient is expressed by using the present tense in some sentences, thus denoting [+ here-and-now]. However, the past tense is used when the patient explains the condition of his leg, and narrates his visit to the traditional herbalist, thereby illustrating the [- here-and-now] dimension. The reasoning demands of this segment are given in sentences of lines [28] **kuzomele** (we have to) and [29] **sengathi kuzomele**, (I think we will have to) thus representing the [- no reasoning] feature of the developmental complexity. There are few temporal and spatial locational references evident within this phase of the dialogue. A few temporal references such as **emveni kwesikhathi** (after some time) occurs in sentence of line [6], **emva kwezinsuku ezimbili** (after two days) occur in sentence of line [7], **namhlanje** (today) in sentence [8] and **ngonyaka odlule** (last year) in sentence [13]. Spatial references occur in sentences of lines [18], **emzimbeni** (on the body), [19] **enyangeni** (to the healer) and [23] **emndenini** (in the family). These features also indicate the [- few elements] feature of development complexity, thus representing a high level of developmental complexity.

Furthermore, this segment demonstrates a low performative level of complexity. During this segment of the dialogue, the doctor is required to perform multiple tasks simultaneously. The doctor has to listen attentively to the patient, draw on prior knowledge as well as knowledge about traditional healers. Furthermore, the doctor has to rephrase or formulate more questions and reach a shared decision as to how to proceed. Hence, these tasks will need to be performed by the doctor within a limited timeframe. This segment therefore represents the following performative complexity features, i.e. [- single task], [+ prior knowledge] and [+ planning]. With both the developmental and performative features taken into consideration, this phase represents the characteristics that fall in category three according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a low performative and high developmental complexity.

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The **pre-examination segment** consists of a task that can be descaled by including no elements of reasoning [+ no reasoning] and less information provided [+few elements]. Furthermore, the task can be made simpler along the resource-dispersing dimensions. For instance, the task could require the participant as the role of the doctor to perform a single task [+single task]. This descaling process of the task conforms to Step 2 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

The segment in this dialogue comprises of a combination of short mono-clausal sentences and longer more syntactically complex sentences. In addition, the communication exchanges in the conversation range from short, one-sentence questions or statements to longer explanations by the participants. A random selection of more complex sentences are analysed in terms of their syntactic complexity.

The sentence in line [6-8] begins with a past tense main indicative mood **uqale** (it started) followed by a conjunction **emva kokuba** (after having). This is followed by a present tense indicative complement clause **ngiklwebheka** (a scratch) and then by another conjunction **emveni kwesikhathi** (after some time). This then introduces a past tense complement clause **kwaphuma** (it came out). The next complement clause features the copular verb **ba- kuba ngcono** (it got better) followed by the conjunctions **kodwa** (but) and **emva kwezinsuku** (after days), which introduces a relative clause **ezimbili** (which are two). The last complement clause features the remote past tense indicative mood **kwaqala kwashintsha** (it started to change).

The sentence in line [13-14] features a remote past passive main clause **kwathiwa** (they said) followed by a past indicative mood complement clause **ukhuphukile** (it increased). The conjunction **kodwa** (but) introduces the next complement clause **abazange** (they never), which features a deficient verb followed by an associative copulative clause **na- ngingesifo** (I have the illness) and possessive adjunct **sikashukela** (of sugar). The next example of a complex sentence occurs in lines [25-26]. The past tense passive main clause **wayephethe** (she suffered) is followed by a relative complement clause **engiphethe** (which I have). The conjunction **futhi** (also) introduces a present indicative mood complement clause **ngibona** (I see) with the associative copulative clause **na- nezingane** (with children), which then follows a present tense complement clause **ziphuza** (they take) and a relative clause **amaphilisi alesifo** (medication of this illness).

As evident in the dialogue, this segment consists of predominantly complex compound sentences. Hence, a high-level syntactic complexity is exhibited, according to Foster et al's Analysis of Speech Unit Model discussed in Section 4.3 of this chapter.

(iii). **The directive phase**

Cognitive complexity

Lines [28 – 40] represent the closing session of the consultation, which is analysed below by virtue of Robinson's cognitive complexity (2005).

In this segment, all sentences are expressed in the present tense illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing dimension. In addition, examples of causal reasoning do appear in sentences of line [35] **ngoba** (because) and **uma** (if) [- no reasoning] but no spatial and temporal references [+ few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a low level of performative complexity. Lines [33] and [40] consists of the doctor convincing the patient of possible surgery to his leg to remove the sore, thus denoting just a single task needed to be carried out [+ single task]. The doctor needs to draw on prior knowledge [+ prior knowledge] and some planning time may be required in order to proceed further during this phase [+ planning]. By virtue of Robinson's Triadic Componential Framework (2005), this phase is an example of a low-level segment of performative complexity. Therefore, it can be deduced that this phase falls into category one, which is related to low developmental and low performative complexity, according to Table 4-1 (see Section 4.2.3) of Robinson's Dimensions of Complexity Model (2005).

Decomplexification of target task according to SSARC model (Robinson, 2010)

In the **directive phase**, the task is simple along the resource-directing phase however, the element of reasoning can be excluded [+no reasoning]. The task is simple to perform on all relevant dimensions of complexity along the resource-dispersing variables.

Syntactic complexity at sentence and clausal level

This segment consists of mostly complex sentences. The sentence of lines [28-30] is an example of a complex compound sentence. The main present tense indicative mood main clause **ngibona** (I see) is

followed by an associative copulative clause **na- :nawe unaso isifo** (and you too have the illness) and then by a possessive adjunct **sikashukela** (of diabetes). The conjunction **kodwa** (but) is followed by a subjunctive mood complement clause **kuzomele** (we will have to), and then a subjunctive mood clause **sithathe** (take), as well as a future tense complement clause **sizoqinisekisa** (to confirm). The next complement clause consists of the conjunction **futhi** (and), which introduces a present tense indicative mood clause **ngibona** (I think), followed by a subjunctive mood complement clause **kuzomele** (we will have to). This is then followed a subjunctive mood complement clause **sihlinze** (to operate) and a consecutive mood deficient verb **singeke** (it will not) as well as a subjunctive mood complement clause **sibolise** (affect).

Another complex compound sentence is evident in lines [35-37]. The present tense indicative mood main clause **ngiyezwa** (I understand) is followed by the conjunction **kodwa** (but) and then by a subjunctive mood clause **kumele** (we have to), which is further followed by a subjunctive mood clause **sense** (do), the instrumental **nga- ngokuphuthuma** (rush), and a relative clause **okukhulu** (that is big). The conjunction **ngoba** (because) introduces a potential mood complement clause **uma** (if) followed by another complement clause **kungenzeka** (it could necessitate). This is then followed by the conjunction **ukuthi** (that), which introduces a subjunctive mood complement clause **baze badinge** (they need) and then followed by **ukuthi** (that) once again and the subjunctive mood clause **bawunqamule** (they amputate it).

The sentence in line [39] is the only simple sentence expressing agreement. Therefore, this segment illustrates a high-level syntactic complexity according to Foster et al’s Analysis of Speech Unit Model discussed in Section 4.3 of this chapter.

Syntactic complexity at phrasal level for task ten

In this dialogue, several examples of noun phrases (NP’s) containing nominal modifiers that include adjectives, numerals, quantifiers (‘all/whole’), demonstratives, nominal and clausal relatives, semantic possessives are evident. A few selected examples of these NP’s are illustrated. The NP’s in lines [4] and [8] include adjectives, **waba mnyama** (it turned black) and **usummyama futhi ubuhlungu** (it is black and painful) respectively. The noun phrase **kwezinsuku ezimbili** (two days) in line [7] consists of a nominal relative **ezi-** (which is) with a numeral **-bili** (two). Examples of clausal relatives are evident in lines [15], **ngonyaka odlule** (last year) and [25] **yilento engiphethe** (it is this disease, which I have). This noun phrase **yilento engiphethe** (it is this disease, which I have) also contains a demonstrative in **yilento**. Another example of the demonstrative is given in line [36] **lesi silonda** (this

sore). Noun phrases containing semantic possessives are evident in lines [19] **enyangeni yami** (to my herbalist) and [25] **umama wami** (my mother). There is an example of a quantifier in line [30] **umlenze wonke** (whole leg).

Given the noun phrases described above, they are considered complex because they consist of a lexical head with a modifier (i.e. adjectives, numerals, quantifiers (‘all/whole’), demonstratives, nominal and clausal relatives, semantic possessives) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) discussed in section 4.3.1.

4.5.11 Task descriptor 11

Umnuzana Qumbisa Mngadi oneminyaka engama-61 onesifo sikashukela uze esibhedlela ngoba ezwa ubuhlungu nokuvuvukala ezandleni nasezinyaweni zakhe. Wena njengodokotela osemsebenzini kudingeke ukuthi usize lesi siguli. Mbuze ukuthi ubuhlungu anabo buqale nini futhi kukhona yini imithi ayisebenzisayo. Mbuze ukuthi kukhona yini esinye isifo esimphethe. Thola ulwazi ngomsebenzi awenzayo. Yazisa isiguli ukuthi kufanele sithathe isithombe. Mazise ukuthi uzomnikeza amaphilisi okunqanda ubuhlungu nokuvuvukala. Vala ingxoxo yakho nesiguli ngokusazisa ukuthi sibuye futhi uma singezwa kahle noma uma ubuhlungu buqhubeka.

Mr Qumbisa Mngadi, a 61-year-old diabetic patient has come to hospital because he has been experiencing pain and swelling on his hands and feet. You as the doctor on call will have to consult with this patient. Ask him about when this pain started and if he is on any medication. Ask him if he suffers from any other illnesses. Find out what kind of work does he do. Inform the patient that he will have to do an X-ray. Tell him that you will give him pills for the pain and swelling. Conclude the consultation by informing the patient to return if he does not feel well or if the pain continues.

4.5.11.1 Dialogue 11

D = Doctor

P = Patient

[Language functions]

D: Sawubona baba unjani? (*Hello, how are you?*) (1)

[Greeting], [Enquiry about patient’s well-being]

P: Ngiyaphila dokotela singezwa kuwe? (*I am fine doctor, how are you?*) (2)

[Greeting], [Response about well-being]

- D: Ngiyaphila nami. Ngicela ukubuza imibuzo nje embalwa mayelana nenkinga yakho le oze ngayo lapha esibhedlela. (*I am also fine. Can I ask you few questions related to your problem, why are you here at the hospital*). (5)
 [Requesting permission to ask questions about problem], [Asking reason for hospital visit]
- P: Kulungile dokotela ungabuza. (*It is fine doctor you can ask*). (6)
 [Agreement]
- D: Kungabe kwenzenjani, yini le ozizwa unayo? (*What is happening, what is wrong?*)
 [Probing into patient's condition]
- P: Sekunamasonto amabili nginezinhlungu emalungeni ezinyaweni kanye nezandleni futhi ngithe uma ngizwa lezi zihlungu ngacabanga nje ukuthi mhlambe yilesi sifo zikashukela esinazo kepha ngacina sengize ngacabanga ukubona udokotela ngoba lento iyangihlupha. (*It has been two weeks now that I had this pain in my joints, on my feet and hands, at the time I felt this pain I thought maybe I am diabetic so I thought let me see doctor*). (14)
 [Description of problem]
- D: Kukhona oke wakusiza ukuze uqede izinhlungu? (*Is there something you took for pain?*) (16)
 [Enquiry whether medication was taken for pain]
- P: Yebo ngike ngathenga amaphilisi ezinhlungu ngawaphuza isikhashana nje kodwa ngaphinda ngawayeka ngoba ebona ukuthi isisu sami sibe buhlungu. Lapho ke ngibe sengitshelwa umakhelwane wami ukuthi kukhona omunye ubaba oyinyanga okwaziyo ukulapha lezi zihlungu. Ngibe sengibhekisa amabombo kuye lo mnumzane. Imithi yakhe ingisizile kancane kodwa azipheli izinhlungu. (*Yes, I bought pills for the pain, took them, and stopped because they upset my stomach. I was told my neighbour about another traditional healer who knew how to treat these pains. I went there to this man. His medication helped me a little bit but it did not take away the pain*). (25)
 [Confirmation about medication], [Information on medication from traditional healer]
- D: Ngiyezwa baba, kungabe unazo ezinye izifo ezifana nesifo senhlinziyo okukanye ushukela? (*I hear you; do you have other illness related to this, maybe heart disease and diabetes?*) (28)
 [Enquiry about other illnesses]
- P: Yebo nginaso isifo sikashukela kodwa cha anginaso esehliziyo. (*Yes, I am diabetic but I do not have heart problems*). (30)

[Confirmation of diabetes]

D: Kungabe wenza imisebenzi enjani ekhaya? (*What kind of work you are doing at home*)? (32)

[Enquiry about nature of work at home]

P: Ngingumuntu ogqilazekayo ngoba mina ngiyazenzela izinto ekhaya. (*I am a hard worker because I do everything by my self*). (34)

[Response to question]

D: Ngiyezwa, uke waya emtholampilo ngaphambilini? (*I hear you, did you go clinic before*)? (36)

[Asking about previous clinic visit]

P: Cha dokotela angikaze ngiye. (*No I have not been*). (37)

[Response to clinic visit]

D: Ngicela ukukuhlola lapha ezandleni nasezinyaweni. (*Can I please examine the hands and feet*)? (39)

[Request to examine patient's hands and feet]

P: Kulungile. (*No problem*). (40)

[Agreement]

D: Ngiyacabanga ukuthi uvuvukele kakhulu lapha nokuthi usezinhlungwini. Ngizokunika le ncwadi ukuze uyokwenza i-X-ray bese ngizokunika amaphilisi ozowaphuza uma kuqhubeka kumele ubuye emva kwesonto noma nini uma ungazizwa kahle. (*I think you are very swollen and you have pain. I will give you this letter so that you can go and do an X-ray and I will give you pills to take; if it continues it is necessary that you come back after a week or at any time if you do not feel well*). (47)

[Information about condition], [Request to have X-ray done], [Informing patient to return if problem persists]

P: Ngiyabonga dokotela. (*Thank you*). (48)

[Expressing gratitude]

4.5.11.2 Task complexity

Task typology – interactional complexity

The task in dialogue 11 is predominantly information gap task according to Pica et al.'s task typology (1993). One participant (patient) holds the information that is not already known to the other participant (doctor) but which he needs to know for task completion. In lines 7-37, participant X (patient) holds

the information that is not already known to the other participant Y (doctor). According to Table 2-1 (see section 2.3.4.4 in Chapter 2), the features of this task configure towards a possible two-way flow of information (X=Y) and it corresponds to interactant relationship 1b and interactant requirement 2b. Both participants (doctor and the patient) work toward a convergent goal and a single outcome. The doctor and the patient want to obtain all the relevant information that they both do not know, i.e. the doctor needs to know what the cause of the swelling on the patient's hands and feet is and the patient is concerned about the swelling. Therefore, they are also corresponding to the features of goal orientation 3a and outcome option 4a in Table 2-1. In order to reach the convergent goal (+) and the single outcome (1) of the task, interaction is required (+), according to Table 2-2 (see section 2.3.4.4 in Chapter 2).

This dialogue is also a decision-making task. In lines [41-47] of the dialogue, the doctor dominates in reaching a decision to do an X-ray and prescribe medication. Therefore, interaction is required (+). There could be more than one outcome possible depending on the results of the X-ray as described in lines [41-47].

(i). The introductory phase

Cognitive complexity

Lines [1- 14] constitute the introductory phase or the initiating the session phase. These sentences are analysed by virtue of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimensions.

The greeting and asking after well-being between the doctor and patient takes place in the present tense. Thus, representing the [+ here-and-now] feature of Robinson's developmental complexity. However, the patient uses the past tense when he narrates his condition, thereby representing the [- here-and-now] feature. There is causal reasoning given in sentence of line [12], **ngoba** (because) therefore denoting [- no reasoning] feature. Furthermore, there are several temporal and spatial locational references within this segment of the dialogue. Spatial locational references occur in sentences of lines [4] **esibhedlela** (at the hospital), [9] **emalungeni ezinyaweni** (joints on the feet), and [10] **nezandleni** (and in the hands). There is one temporal reference given in sentence of line [9] **sekunamasonto amabili** (it has been two weeks). Thus, representing the [- few elements] feature of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a high-level segment of developmental complexity.

This segment represents a multiple task example as greetings take place, asking about well-being, requesting permission to ask questions and the patient is presenting his complaint. Therefore, it represents [- single task] feature along the resource-dispersing variable. No planning is necessary on the part of the doctor because the information exchanged is routine and familiar and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- single task], [- planning] and [- prior knowledge] along the resource-dispersing dimension of Robinson's Cognition Hypothesis (2005), which illustrates a high level of performative complexity and high developmental complexity. Thus, this phase exhibits features that fall predominately in category four according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and high developmental complexity.

Decomplexification of target task according to SSARC model (Robinson, 2010)

The task in the **introductory phase** is complex to perform along both the resource-directing and dispersing dimensions. It requires the participant, in the role of the patient, to describe the presenting complaint in the past tense. The element of reasoning is provided and information on spatial locational references are given. In terms of the SSARC model, this task can be descaled along the resource-directing dimensions. The presenting complaint could be provided using the present tense. Providing less information could be included to this task as well as excluding the element of reasoning [+no reasoning]. Along the resource-dispersing dimensions, the task can be descaled where the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform only a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This segment of dialogue 11 consists of a combination of simple and complex clauses. The simple exchanges express short mono-clausal questions and answers. These clauses are evident in sentences of lines [1-3] & [6 -8]. There are two instances where complex sentences occur within the pre-examination phase. In line [3-4], the sentence begins with a main clause **ngicela** (I would like) followed by an infinitive complement clause **ukubuza** (to ask) with a relative clause **embalwa** (a few). This is then followed by a conjunction **mayelana** (related to) featuring the associative copulative clause **na-**

nenkinga (with the problem) and a relative clause **oze** (that makes you come) and a locative adjunct **esibhedlela** (at the hospital).

The second example of a complex compound sentence occurs in lines [9-12]. The main relative clause **sekunamasonto amabili** (it has been two weeks now) features the associative copulative clause **na-nginezinhlungu** (I have pain) followed by two locative adjuncts **emalungeni ezinyaweni** (in the joints on the feet). The conjunction **kanye** (and) is followed by the associative copulative clause **na-nezandleni** (on the hands) and then further by the conjunction **futhi** (and). This then introduces the next compound clause **ngithe** (at the time) followed by a potential mood conjunction **uma** (when), which is followed by an indicative present tense complement clause **ngizwa** (I felt) followed by a demonstrative **lezi zinhlungu** (this pain). The next complement clause **ngacabanga** (I thought) is followed by the conjunction **ukuthi** (that) followed by a potential mood clause **mhlambe** (perhaps) and then by a copular complement clause **yilezifo** (it is the illness) featuring a possessive **zakashukela** (of diabetes) and a relative clause **esinazo** (which we have). The conjunction **kepha** (however) introduces the next past tense complement clause **ngacina** (I ended) followed by a consecutive verb **sengize** (I now came) and then a past tense compound clause **ngacabanga** (I thought) featuring an infinitive verb **ukubona** (to see). The last complement clause features the conjunction **ngoba** (because) followed by a present tense indicative mood complement clause **iyangihlupha** (it is troubling me).

Considering the high syntactic complexity in the preceding sentence, this segment demonstrates a high level of syntactic complexity according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

(ii). The diagnostic phase of questioning, instructing and explaining

Complexity complexity

Lines [15-37] constitute the the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's cognitive complexity dimensions.

During the **pre-examination phase** of the segment, the communication between the doctor and the patient is expressed by using the present tense in some sentences, thus denoting [+ here-and-now]. The patient however, narrates the use of certain medication given to him by a traditional herbalist using the past tense, thereby illustrating the [- here-and-now] dimension. There is a single occurrence of reasoning given in sentences of line [18] and [33] **ngoba** (because), thus representing the [- no

reasoning] feature of the developmental complexity. There are few spatial locational references evident within this phase of the dialogue but no temporal references given. Spatial references occur in sentences of lines [31], **ekhaya** (at home) and **emtholampilo** (at the clinic) [35]. These features also indicate the [- few elements] feature of development complexity, thus representing a high level of developmental complexity.

Furthermore, this segment demonstrates a low performative level of complexity. During this segment of the dialogue, the doctor is required to perform multiple tasks simultaneously. The doctor has to listen carefully to the patient, draw on prior knowledge and knowledge about traditional medicine, rephrase or formulate more questions and reach a shared decision as to how to proceed. Moreover, these tasks will need to be performed by the doctor within a limited timeframe. Therefore, this segment represents the following performative complexity features, i.e. [- single task], [+ prior knowledge] and [+ planning]. With both the developmental and performative features taken into consideration, this phase represents the characteristics that fall in category three according to Table 4-1 (see Section 4.2.3) of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a low performative and high developmental complexity.

The **during-the-examination phase**, as indicated in sentences of lines [38-40], entails the diagnostic instruction by the doctor. This communication takes place in the present tense, thus denoting the [+ here-and-now] dimension. There is no evidence of causal reasoning indicated. This segment represents the [+ no reasoning] feature of the developmental complexity. There is spatial locational references occurring in sentence of line [38] **ezandleni nasezinyaweni** (on the hands and on the feet) but no temporal references, thereby indicating the [- few elements] feature of development complexity, thus representing a low level of developmental complexity.

This segment further describes the doctor having to perform just a single task which indicates the [+ single task] feature. The doctor requests to examine the swelling of patient's hands and feet. Neither the doctor nor the patient need to draw on prior knowledge [- prior knowledge] and no planning is required during this phase [- planning]. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment describes features of category two, which is associated with low developmental and high performative complexity.

Decomplexification of target task according to SSARC model (Robinson, 2010)

The **pre-examination segment** consists of a task that can be descaled by including no elements of reasoning [+ no reasoning] and less information provided [+few elements]. It can also require the participant in the role of the patient to describe the events using the present tense. Furthermore, the task can be made simpler along the resource-dispersing dimensions. For instance, the task could require the participant as the role of the doctor to perform a single task [+single task]. This descaling process of the task conforms to Step 2 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

In the during-the-examination phase, the task is simple along the resource-directing phase. However, the task can provide less information on spatial and locational references [+few elements]. The task can be further descaled along the resource-dispersing dimensions. This can be done for example, the participant in the role of the doctor could be provided prior knowledge [+prior knowledge] and planning time [+planning time] to complete the task.

Syntactic complexity at sentence and clausal level

The sentences in the **pre-examination phase** consists of several complex compound sentences. Sentences in lines [31], [20-21] and [35-37] are realised as simple mono-clausal sentences. However, sentences in lines [15-30] and [33] illustrate a high level of syntactic complexity. A selection of these complex sentences are analysed as follows.

The sentence of line [17-18] begins with a remote past tense indicative mood main clause **ngathenga amaphilisi** (I bought pills) followed by a relative clause **ezinhlungu** (painkillers), which is further followed by a past tense complement clause **ngawaphuza** (I took them). The conjunction **kodwa** (but) introduces a deficient verb **ngaphinda** (I repeated) that follows a past tense subordinate clause **ngawayeka** (I stopped), which is then followed by another conjunction **ngoba** (because), which features a relative verb **ebenza** (it made). The conjunction **ukuthi** (that) introduces the last subjunctive mood complement clause featuring a copular verb **sibe buhlungu** (it become painful).

Line [19] introduces a sentence with a main clause featuring a situative mood conjunction **lapho** (when) followed by a complement clause **ngibe** (I became), which is then followed by a passive complement clause **sengitshelwa** (I was told). The conjunction **ukuthi** (that) introduces a relative complement clause **omunye** (there is someone) followed by another relative clause **oyinyanga**

okwaziyo (about a healer who knew how), which is then followed by an infinitive verb **ukulapha** (to treat).

The sentence in line [21-22], begins with a recent past tense indicative mood main clause **ingisizile** (it helped me) followed by the conjunction **kodwa** (but), which introduces a negative verb complement clause **azipheli** (it did not take away the pain). The sentence of line [26-27] consists of a question phrase that starts with a present indicative mood main clause **ngiyezwa** (I hear you). The question features a copular verb **kungabe** (is there any), which is followed by an associative copulative clause **na-: unazo**. This is then followed by two relative clauses **ezinye ezifana** (other illness that is relates), and then further followed by another associative copulative clause **na- nesifo** (to the illness) and the possessive morpheme **sa- senhlinziyo** (of the heart) and lastly by a relative complement clause **okukanye ushukela** (and diabetes).

The response to the above question is also considered complex and occurs in line [29]. The response begins with a main clause featuring the associative copulative clause **na- nginaso** (I am) followed by a possessive adjunct **sikashukela** (diabetic). The conjunction **kodwa** (but) introduces a negative associative copulative complement clause **anginaso** (I do not have), which features the associative copulative clause **na-** and a relative clause **esenhliziyoy** (heart problem). From the analysis above, it is evident that according to Foster et al's Analysis of Speech Unit Model (2000), this segment exemplifies a high level of syntactic complexity, discussed in Section 4.3.

The sentences evident in the **during-the-examination phase** segment of this dialogue consist of one example of a simple sentence expressing agreement and another sentence that is considered a complex clause. The sentence in line [38] starts with a present indicative mood main clause **ngicela** (I would like) followed by an infinitive clause **ukukuhlola** (to examine you), which is further followed by a locative adjunct **ezandleni** (on the hands) as well as the associative copulative clause **na-nasezinyaweni** (on the feet), featuring a locative adjunct. Therefore, this segment characterizes a high-level syntactic complexity according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

(iii). The directive phase

Cognitive complexity

Lines [41 – 48] represent the closing session of the consultation, which is analysed in terms of Robinson's cognitive complexity model (2005).

In this segment, all sentences are expressed in the present tense illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing variable. In addition, there is a single reasoning occurrence [- no reasoning] occurring in sentence of line [42] **ukuze**. No temporal spatial references [+ few elements] are evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a high level of performative complexity. Lines [41- 44] consist of the doctor performing multiple tasks, for example the doctor has to inform the patient about his condition post examination, write a letter to the X-ray division requesting the procedure be carried out and then prescribe medication to the patient, thus denoting [- single task]. The doctor and the patient need not draw on prior knowledge [- prior knowledge] as this is familiar routine work on the part of the doctor. No planning is required during this phase [- planning]. By virtue of Robinson's Triadic Componential Framework (Robinson, 2005), this phase is an example of a low-level segment of performative complexity. Therefore, it can be deduced that this phase falls into category two, which is related to low developmental and high performative complexity according to Robinson's Dimensions of Complexity Model (2005), illustrated in Table 4-1 (see Section 4.2.3).

Decomplexification of target task according to SSARC model (Robinson, 2010)

The **directive phase** consists of a simple task to perform along the resource-directing dimensions as it requires the participant, in the role of the patient, to describe events using the present tense and no additional information on locational or spatial references are provided. However, elements of reasoning can be excluded. However, the task can be descaled along the resource-dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. This descaling process of the task conforms to Step 3 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

In this segment, the sentence in line [48] is a simple sentence expressing gratitude. However, the sentences in line [41- 44] are complex sentences. The first complex sentence begins with a present tense indicative mood main clause **ngiyacabanga** (I think), which is followed by the conjunction **ukuthi** (that) and then further by an indicative mood complement clause **uvuvukele** (you are swollen). A conjunction with the associative copulative clause **na- nokuthi** (and that) introduces a locative adjunct complement clause **usezinhlungwini** (you have pain). The second example of a complex clause is evident in the sentence, which starts with a future indicative mood main clause **ngizokunika** (I will give you) followed by the conjunction **ukuze** (so that), which is further followed by a future subjunctive mood clause **uyokwenza** (you can). The conjunction **bese** (and then) introduces a future indicative mood complement clause **ngizokunika** (I will give you) followed by a relative complement clause **ozowaphuza** (pills to take). The conjunction **uma** (if) is followed by a complement clause **kuqhubeka** (it continues) and the subjunctive **kumele** (you must) is followed by a subjunctive mood clause **ubuye** (return). This is followed by an adverbial of time phrase **emva kwesonto** (after a week) followed by the conjunction **noma** (or) and then further by another potential mood clause **uma** (if) that introduces a negative complement clause **ungazizwa** (you do not feel well).

According to the analysis above, this segment therefore illustrates a high level of syntactic complexity in terms of Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

Syntactic complexity at phrasal level for task eleven

This dialogue contains an extensive range of NPs with modifiers including nominal and clausal relatives, semantic and descriptive possessives and demonstratives. A few selected NPs are provided hereafter. The nominal modifiers consist of lexical heads and nominal relatives, which are evident in lines [3] **imibuzo nje embalwa** (few questions) and [9] **sekunamasonto amabili** (it has been two weeks now). An example of a clausal relative is identified in line [33] **ngingumuntu ogqilazekayo** (I am a hardworker). Semantic possessives found in noun phrases are evident in lines [3] **nenkinga yakho** (your problem), [18] **isisu sami** (my stomach) and [21] **imithi yakhe** (his medication) whereas descriptive possessives are evident in lines [11] **isifo sikashukela** (disease of diabetes), [17] **amaphilisi ezinhlungu** (pills for the pain), [26] **nesifo senhliziyo** (and the disease of the heart). Examples of demonstratives are provided in lines [10] **lezi zinhlungu** (this pain), [11] **yilesi sifo sikashukela** (it is this disease of diabetes), [21] **lo mnumzane** (this man) and [42] **le ncwadi** (this letter).

The noun phrases illustrated above are realised as complex since the noun phrases contain lexical heads with modifiers (i.e. nominal and clausal relatives, semantic and descriptive possessives and demonstratives) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) discussed in section 4.3.1.

4.5.12 Task descriptor 12

Isiguli sowesilisa sethula ukulandelela egunjini lokuhlinzela emtholampilo ukuthi kunesimila esikhula kwingaphakathi lethanga. Lesi simila sake sahlinzwa phambilini. Inkinga manje ukuthi isilonda asipholi kanti nesimila sesiqala ukuba sikhulu futhi. Wena njengodokotela osemsebenzini kuzofanele uxoxisane nalesi siguli. Buza isiguli ukuthi kungani kuye kwafanele ukuthi size esibhedlela. Mbuze ukuthi uke waphathwa yini ikhanda noma abe nenhliziyo encane. Mbuze ukuthi ikhona yini imithi ayisebenzisayo njengamanje. Buza ngokujwayele ukwenziwa umndeni wakhe kanye najwayele ukukwenza yena emphakathini. Phetha ingxoxo ngokutshela isiguli ukuthi kuzofanele sizohlolwa umlenze.

A male patient presents at the surgery follow-up clinic with a mass growing on the inner aspect of the thigh. This tumour was previously removed surgically. The problem now is that the wound is not healing and the tumour is starting to enlarge once again. You as the medical doctor on duty will have to conduct an interview with this patient. Ask the patient about why he has come to the hospital. Ask him if he has been experiencing any headaches or nausea. Ask him if he is on any medication. Enquire about his family and social habits. Conclude the consultation by informing the patient that you will have to do a physical examination of the leg.*

4.5.12.1 Dialogue 12

D = Doctor

P = Patient

- D: Unjani namhlanje? (*How are you today?*) (1)
[Greeting], [Enquiry about patient's well-being]
- P: Ngingcono. (*I am better.*) (2)
[Response to well being]

- D: Manje ngicela ukubuza ukuthi yin indaba ulana esibhedlela? Ulaliselweni? (*Can I please ask why are you here in hospital? What were you admitted for?*) (5)
[Request reasons for hospital visit]
- P: Kukhona incwadi engayithola emtholampilo kwathiwa angize lana esibhedlela. (*I got a letter from clinic, they said I must come here to hospital.*) (7)
[Response to the hospital visit]
- D: Le ncwadi owayithola emtholampilo, wayithola nini? (*That letter you got from hospital, when did you get it?*) (9)
[Follow-up questions on hospital visit]
- P: Ngiyithole ngoLwesihlanu, kwathiwa angiyi esibhedlela iWentworth bona base bangenzela incwadi yokuthi ngize la ngizohlinzwa. (*I got it on Wednesday, they said I must go to Wentworth hospital from there they sent me here for an operation.*) (13)
[Explanation for hospital visit]
- D: Yini bekwenzenjani? Yini eyadala ukuthi uye emtholampilo? (*What happened? Why did you go to clinic?*) (15)
[Request reasons for previous clinic visit]
- P: Emtholampilo bona bathi bahlanza isilonda esisendaweni eqondile ayi eme kanje ngoba lesi basaba ukuthi sizovuka ngoba kuvokomala nje. (*At the clinic they said they cleaned the wound that is on the flat place not like this, they said they are scared that this will come back again because it getting swollen.*) (19)
[Response to previous clinic visit]
- D: Sikuqale nini lesi silonda? (*When did this sore start?*) (20)
[Enquiry into when the sore started]
- P: Ngahlinzwa base bangangithunga. (*I had the operation but they did not stitch me.*) (22)
[Response to enquiry]
- D: Wawuhlinzelwani? (*For what reason did you have an operation?*) (23)
[Follow-up questions into the operation of the sore]
- P: Nganginento esiye sithi yifa noma isimila. (*I had something that they said was a sickness or a tumour.*) (25)
[Provision of answer]
- D: Yini leyo? Awuyichaze. (*What is it? Please explain.*) (26)
[Follow-up questions about the tumour]
- P: Yinto nje ezimilelayo engabuhlungu kodwa. (*It is a thing that was growing but not painful.*) (28)

[Description of tumour]

D: Yakuqala nini? (*When did it start?*) (29)

[Enquiry into when it started]

P: Kade yangiqala, sekuyiminyaka, yaqala incane ilokhu ikhula. (*It started a long time ago, years ago, it started small and then got bigger.*) (31)

[Description of when the tumour begun]

D: Yaze yaba nkulu ilokhu ikhula kancane? (*Did it grow big quickly or progressively?*)

[Enquiry regarding the growth of the tumour]

P: Yaze yaba nkulu yaze yahlinzwa. (*It became big and so they operated on it.*)

[Giving information]

D: Yase yaba ngcono ngesikhathi usuhlinziwe? (*Did it get better at the time you had the operation?*) (36)

[Asking after recovery period]

P: Sekuyisona isilonda lesi kuphela esingeze ngaso lana. (*It is this sore only that has brought me here.*) (38)

[Response to question]

D: Ngoba ibukeka engathi isankulu nje. (*But it looks as if it is still big.*) (39)

[Comment on the sore]

P: Yebo, nabo onesi baxakekile. (*Yes, even the nurses are shocked.*) (40)

[Agreement]

D: Ikhulile nje ngesikhathi usubuya ukohlinzwa noma isale yaba njalo usuhlinziwe? (*Did it get bigger after the operation or did it stay the same?*) (42)

[Follow-up questions about the operation of the sore]

P: Kade kungekho lutho kade kungekho nyama, zase ziyagcwala izinyama ngoba kade kunomgodi. (*There was nothing here even flesh, after that it healed and the flesh closed the hole.*) (45)

[Description of post operation of the sore]

D: Kulungile, ngesikhathi ikhula lento ebilana emathangeni awuzange wehle emzimbeni? Awuzange ungakuthandi ukudla noma inhliziyo ibemnyama? Awuzange ukhwehlele? Noma ukhwehlele igazi into efana naleyo? (*It is fine, at the time this lump was growing in your thigh, were you not losing weight? Were you not losing appetite? Were you not coughing? Or coughing blood or anything similar?*) (51)

[Enquiry into other associated symptoms or problems]

P: Cha. (*No!*) (52)

[Denial]

D: Isisu asikaze sikukhiphe noma siqumbelane? (*Did you not have diarrhoea or constipation*)? (54)

[Follow-up questions about other associated ailments]

P: Cha. (*No!*) (55)

[Denial]

D: Ikhanda alikaze likuphathe? Mhlambe leli khanda elikuphatha kuze kube engathi ungaphalaza? (*Did you not have headache? Maybe a severe headache that is associated with nausea*)? (58)

[Follow-up questions about other associated ailments]

P: Cha. (*No*). (59)

[Denial]

D: Zikhona izifo onazo noma ezikuphathayo noma amaphilisi owadlayo? (*Do you have other sicknesses or are you taking any medication*)? (61)

[Follow-up questions about other sicknesses], [Enquiry into medication]

P: Yebo ngiqale nje ngoba kade ngiyohlinzwa, ngingesifo sikashukela. (*Yes I started some medication when I had the operation; I have diabetes*). (63)

[Response regarding medication], [Confirmation about diabetes]

D: Bakunikeza amaphilisi noma bayakujoza? (*Did they give you pills or injection*)?

[Enquiry whether any medication were dispensed]

P: Banginikeza amaphilisi. (*They gave me pills*). (65)

[Confirmation regarding the dispensing of medication]

D: Iphika lona? (*Do you have asthma*)? (66)

[Enquiry regarding asthma]

P: Cha bangihlola bathola ukuthi anginalo. (*They examined me and they found that I do not have it*). (68)

[Response to question on asthma]

D: i-HIV yona unayo? (*Do you have HIV*)? (69)

[Enquiry into other associated ailments]

P: Cha anginayo. (*No I do not have*). (70)

[Denial]

D: Wake wahlinzwa ngaphambilini? (*Have you ever had an operation before*)?

[Enquiry regarding past surgery]

P: Yebo ngake ngahlinzwa esiswini. (*Yes on the abdomen*). (72)

- [Response to past surgery]
- D: Wawunani? (*What was wrong*)? (73)
- [Asking about the problem]
- P: Ngangiphalaza. (*I was vomiting*). (74)
- [Describing the problem]
- D: Awunaso isiqiniseko sokuthi wawuhlinzelwani? (*So you are not sure why you had the operation*)? (76)
- [Asking reason why operation was done]
- P: Cha. (*No*). (77)
- [Denial]
- D: Kwakuyinini ngesikhathi uhlinzwa? (*When was that*)? (78)
- [Asking when past surgery was done]
- P: Kwakungunyaka wezi-1998. (*In year 1998*). (79)
- [Expressing time of operation]
- D: Ngaphandle kwalokho uhlala nobani ekhaya? (*Other than that who do you live with at home*)? (81)
- [Asking about family]
- P: Ngihlala nomndeni wami. (*I live with my family*). (82)
- [Providing family information]
- D: Umndeni wakho obani? Izingane zakho? (*Who is your family? Your children*)? (84)
- [Enquiry into family]
- P: Izingane zami nobhuti kuphela. (*My children and my brother only*). (84)
- [Response to question]
- D: Bayaphila yini umndeni wakho? (*Is your family well*)? (85)
- [Enquiry regarding family well being]
- P: Yebo bayaphila bonke. (*Yes they are all well*). (86)
- [Confirmation]
- D: Wena uyaphuza noma uyabhema? (*Are you smoking or drinking*)? (87)
- [Enquiry into social habits]
- P: Cha. (*No*). (88)
- [Denial]
- D: Imithi yesintu awukaze uyisebenzise? (*Have you ever used traditional medicine*)?(90)
- [Enquiry about the use of traditional medicine]
- P: Cha. (*No*). (91)

[Denial]

D: Kulungile, iyona leyo imibuzo enginayo. Ake sibheke la emlenzeni sibone ukuthi sizokusiza kanjani. (*It is fine, these are the only questions I have. Lets look at your leg and then we will decide how to help you*). (94)

[Informing patient]

P: Kulungile akunankinga. (*No problem*). (95)

[Response]

D: Ngiyabonga, ngicela ugibele embhedeni. (*Thank you, would you get onto the bed, please*). (97)

[Expressing gratitude], [Instructing patient]

4.5.12.2 Task complexity

Task typology – interactional complexity

Task 12 is predominantly an example of an information gap task in terms of Pica et al.'s task typology (1993). One participant holds all information that needs to be accessed by the other participant, for task completion. In lines 6-98, participant X (patient) holds the information that is unknown to the other participant Y (doctor). In terms of the configurations in Table 2-1, this task configures towards a two-way flow of information and it corresponds to interactant relationship 1b and interactant requirement 2b. Both participants (doctor and patient) work together toward a convergent goal and a single outcome. The doctor and the patient want to obtain all the relevant information that they both do not know, i.e. the doctor needs to know how to proceed further with the patient's medical condition and the patient wants the sore on the thigh to heal. Therefore, they are also relating to the descriptions of goal orientation 3a and outcome option 4a in Table 2-1 (see section 2.3.4.4 in Chapter 2). According to Table 2-2 (see section 2.3.4.4 in Chapter 2), interaction is required (+) in order to reach the convergent goal (+) and the single outcome (1) of the task.

(i). The introductory phase

Cognitive complexity

Lines [1- 19] constitute the introductory phase or the initiating the session phase. These sentences are analysed in terms of Robinson's (2005) framework for task analysis, specifically on the cognitive complexity dimension.

The communication in this **introductory segment** takes place between the doctor and patient in lines 1-19 and is conveyed using both the present and past tenses. Thus, representing the [- here-and-now] feature of Robinson's developmental complexity. Both temporal and spatial locational references are evident in this segment. One example of temporal reference is evident in sentence of line [10] **ngolwesihlanu** (on Friday) and examples of spatial locational references are illustrated in sentences of lines [3, 6, 10] **esibhedlela** (in hospital), [6, 8, 14] **emtholampilo** (from the clinic) and [16] **esisendaweni** (on a place). There is one example of causal reasoning indicated in the sentence in line [17] **ngoba** (because). These examples indicate the [- few elements] and [-no reasoning] features of developmental complexity dimension of Robinson's Cognition Hypothesis (2005). Therefore, this phase is an example of a high-level segment of developmental complexity.

This segment does not represent a single task example as it contains the task of greeting; asking after well-being; asking purpose for visit to the hospital and query about the letter patient received from the clinic. However, the content of the dialogue is familiar to the doctor, no planning is required on the part of the doctor, and thus neither the doctor nor the patient require any prior knowledge. Therefore, this segment displays the following characteristics of [- single task], [- planning] and [- prior knowledge] along the resource-dispersing dimension of Robinson's Cognition Hypothesis (2005), which illustrates a high level of performative complexity and high developmental complexity. Thus, this phase exhibits features that fall in category four according to Table 4-1 of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis, illustrating a high performative and high developmental complexity (see Section 4.2.3).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The task in the **introductory phase** is complex to perform along both the resource-directing and dispersing variables. It requires the participant, in the role of the patient, to describe events using the past tense. There are elements of reasoning and few elements given. In terms of the SSARC model, this task can be descaled along the resource-directing dimensions. The presenting complaint could be provided using the present tense. This task could exclude elements of reasoning and providing less information on spatial and locational references could be included in this task. The task can also be descaled along the resource-dispersing dimensions, where the participant in the role as the doctor could be given planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. This descaling process of the task conforms to Step 1 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

Different levels of syntactic complexity are evident in this segment of the dialogue. The sentences in lines [1-3] and [15] are characterised as simple monclausal sentences, whereas the sentences in lines [3], [7], [9], [11-12], [15] and [17-18] demonstrate high levels of syntactic complexity. The sentence in line [10] begins with a past tense indicative mood main clause **ngiyithole** (I got it) followed by a past passive complement clause **kwathiwa** (it was said) and then further followed by a subjunctive mood clause **angiye** (I go) and a locative adjunct **esibhedlela** (to hospital). The next compound sentence features a past tense complement clause **base bangenzela incwadi** (they made a letter) followed by a possessive morpheme **ya- yokuthi** (that) and then by a past tense indicative mood complement clause **ngize** (I come) as well as a future passive complement clause **ngizohlinzwa** (to be operated).

Line [16] consists of a sentence that starts with a main locative clause **emtholampilo** (at the clinic) followed by a present tense indicative mood complement clause **bahlanza** (they cleaned) which is further followed by a locative adjunct **esisendaweni** (on a place) and a relative complement clause **eqondile** (that is flat). The conjunction **ngoba** (because) introduces a present indicative mood complement clause **basaba** (they are scared) followed by another conjunction **ukuthi** (that) featuring a future tense subjunctive mood clause **sizovuka** (it will come back). The last complement clause features a conjunction **ngoba** (because) followed by a potential mood complement clause **kuvokomala** (it is swollen).

According to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter, this segment describes a high level of syntactic complexity.

(ii). The diagnostic phase of questioning, instructing and explaining*Cognitive complexity*

Lines [20-91] constitute the the diagnostic phase of questioning, instructing and explaining and is analysed by virtue of Robinson's cognitive complexity model (2005).

During the **pre-examination phase** of the segment, the communication between the doctor and the patient is expressed by using both the past and present tenses, thereby illustrating the [- here-and-now] dimension. The reasoning demands of this segment are simple since the sentences do not consist of any logical subordinators to indicate causal reasoning, thus representing the [+ no reasoning] feature

of the developmental complexity. There are few temporal and spatial locational references evident within this phase of the dialogue. Examples of temporal references occur in sentences of line [30] **sekuyiminyaka** (years ago) and [79] **kwakungunyaka wezi-1998** (in the year 1998). Spatial references occur in sentences of lines [46] **emathangeni** (on the thighs), [47] **emzimbeni** (on the body) and [72] **esiswini** (in the stomach). These features also indicate the [-few elements] feature of development complexity, thus representing a high level of developmental complexity.

Furthermore, this segment demonstrates a high performative level of complexity. During this segment of the dialogue, the doctor is required to perform multiple tasks simultaneously. The doctor has to listen attentively to the patient, draw on prior knowledge, rephrase or formulate more questions and reach a shared decision as to how to proceed. Moreover, these tasks will need to be performed by the doctor within a reduced timeline. Therefore, this segment represents the following performative complexity features, i.e. [- single task], [- prior knowledge] and [- planning]. With both the developmental and performative features taken into consideration, this phase represents the characteristics that fall predominately in category four according to Table 4-1 of Robinson's Triadic Componential Framework (2005) based on his Cognition Hypothesis illustrating a high performative and high developmental complexity (see Section 4.2.3).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The pre-examination phase is also regarded as a complex task since greater cognitive demands are placed on the participants. The task requires participants to describe events that happened in the past, at different places and times. It also requires participants to perform multiple tasks with no prior knowledge or planning time given. According to the SSARC model (2010), this task can be descaled whereby the participant in the role as the doctor could be given planning time [+ planning] and prior knowledge [+ prior knowledge] to perform just a single task [+ single task]. Furthermore, the participant in the role as the patient could be required to describe the presenting complaint in the present tense [+here-and-now] as well as provide less information on location or spatial references [+few elements]. This task conforms to Step 2 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This detailed pre-examination phase consists of a combination of shorter and longer communication exchanges that are mostly questions and answers expressed between the participants. The participant in the role as the doctor expresses shorter exchanges whereas the participant as the patient expresses

longer exchanges. The shorter exchanges typically contain questions by the doctor. The longer exchanges are information provided by the patient about the medical condition. Both the shorter and longer exchanges contain complex syntactic sentences. In this phase, a random selection of these clauses with complex sentences are analysed for their syntactic complexity. The sentence in line [41] consists of a past tense indicative mood main clause **ikhulile** (did it get bigger) followed by the conjunction **ngesikhathi** (after) and then further followed by a complement clause **usubuya** (you returned) and then by a passive complement clause **ukohlinzwa** (from been operated). The conjunction **noma** (or) introduces a past tense complement clause **isale** (did it stay) then a copular verb **-ba yaba** (the same) followed by a past tense passive complement clause **usuhlinziwe** (after been operated).

The sentence in line [43] contains a negative main clause **kungekho** (there was nothing) followed by another negative complement clause **kungekho**, which is further followed by a conjunction **zase** (after that). This introduces another present tense indicative mood complement clause **ziyagcwala** (it closed). The conjunction **ngoba** (because) introduces a complement clause featuring the associative copulative clause **na- kunomgodi** (the hole). Lines [46-47] consists of a complex sentence featuring a main potential mood clause **ngesikhathi ikhula** (at the time is was growing) followed by a demonstrative phrase **lento** (this thing), which is then further followed by a locative adjunct **emathangeni** (in your thighs). A negative deficient verb **awuzange** (did you ever) is followed by a subjunctive mood complement clause **wehle** (lose) followed by a locative adjunct **emzimbeni** (weight in your body) . The sentence in line [62] starts with a past tense main clause **ngiqale** (I started) followed by the conjunction **ngoba** (because) which is then followed by a past passive complement clause **ngiyohlinzwa** (I had the operation). The last complement clause features the associative copulative clause **na- ngingesifo** (I have the illness) followed by a possessive adjunct **sikashukela** (of diabetes). The question clause in line [75] consists of a negative main associative copulative clause **awunaso** (you are not sure) that features the associative preposition **na-**. This is then followed by a possessive concord **sa- sokuthi** and subsequently followed by a past tense question clause **wawuhlinzelwani** (why you had the operation).

Although this segment does comprise of several simple mono-clausal sentences and questions, they considerably exceed that of the complex ones, the syntactic complexity of the analysed sentences is significant. Therefore, this segment exhibits a high level of syntactic complexity, according to Foster et al.'s Analysis of Speech Unit Model (2000), which was discussed in Section 4.3 of this chapter.

(iii). The directive phase***Cognitive complexity***

Lines [92 – 97] represent the closing session of the consultation, which is analysed by virtue of Robinson's cognitive complexity model (2005).

In this segment, all sentences are expressed in the present tense illustrating the [+ here-and-now] feature of developmental complexity along the resource-directing dimension. In addition, there are no causal reasoning [+no reasoning] nor is there any spatial references [+ few elements] evident in this segment. Therefore, according to Robinson's Triadic Componential Framework (2005), this segment exemplifies features of low developmental complexity.

This segment further demonstrates a high level of performative complexity. In lines [92-94], the doctor informs the patient that the history taking is over and that a physical examination of the leg is required and asks the patient to get onto the bed, thus denoting just a multiple tasks needed to be carried out [- single task]. The doctor and the patient need not draw on prior knowledge [- prior knowledge]. No planning is required during this phase [- planning]. In terms of Robinson's Triadic Componential Framework (2005), this phase is an example of a high-level segment of performative complexity. Therefore, it can be deduced that this phase falls into category two, which is associated with low developmental and high performative complexity, according to Table 4-1 of Robinson's Dimensions of Complexity Model (2005) (see Section 4.2.3).

Decomplexification of target task according to the SSARC model (Robinson, 2010)

The **directive phase** consists of a simple task to perform along the resource-directing dimensions, as it requires the participant, in the role of the patient, to describe events using the present tense. Neither elements of reasoning nor additional information is provided. However, the task can be descaled along the resource-dispersing dimensions. For instance, the participant in the role as the doctor could be provided planning time [+ planning] and prior knowledge [+ prior knowledge] to perform only a single task [+single task]. This descaling process of the task conforms to Step 3 of the SSARC model (Robinson, 2010) (see discussion in Section 4.2.4).

Syntactic complexity at sentence and clausal level

This segment of the dialogue consists of two short simple mono-clausal denoting agreement. In addition, it also comprises of two instances of complex sentences, which is analysed as follows. The

sentence found in line [92] consists of a subjunctive mood main clause **ake** (let us) followed by a subjunctive verb clause **sibheke** (look), which is further followed by a locative adjunct **emlenzeni** (at your leg). The subjunctive mood verb complement clause **sibone** (we decide) features the conjunction **ukuthi** (that) which is followed by a future complement clause **sizokusiza** (we will help you). The sentence of line [96] features a present tense main clause **ngiyabonga** (I thank you) expressing gratitude. This is followed by a complement clause **ngicela** (I would like you), which is then followed by a subjunctive verb clause **ugibele** (to get on) and a locative adjunct **embhedeni** (to the bed). This segment therefore, characterises a high level of syntactic complexity, according to Foster et al's Analysis of Speech Unit Model (2000) discussed in Section 4.3 of this chapter.

Syntactic complexity at phrasal level for task twelve

This dialogue contains a few examples of NPs with reference to nominal modifiers with demonstratives, clausal relative clauses and adjectives. Demonstratives are evident in lines [8] **le newadi** (this letter), [20] **lesi silonda** (this sore) and [56] **leli khanda** (this headache). An example of a clausal relative clause with a preposition is found in line [16] **isilonda esisendaweni eqondile** (the wound that is on a flat place). Adjectives are found in line [30] **sekuyiminyaka yaqala incane ilkohu ikhula** (it is now years it started small and then got bigger). One example of an emphatic pronoun with a demonstrative is evident in line [37] **sekuyisona isilonda lesi** (it is this sore only).

The examples of the noun phrases described above are considered complex because the noun phrases consist of a lexical head with a modifier (i.e. demonstratives, clausal relative clauses and adjectives) according to the taxonomy model of linguistic complexity (Bartning et al., 2015) which has been discussed in section 4.3.1.

4.6 Sequencing of doctor-patient communication target tasks

The analysis of the communication tasks in Section 4.5 were conducted in random order and analyzed according to their task complexity i.e. Pica et al's (1993) interactional complexity, Robinson's cognitive complexity model and SSARC Model (2005 & 2010) for descaling of tasks as well as Foster et al.'s (2000) and Bartning et al.'s (2015) syntactic complexity. Table 4-4 below illustrates the information pertaining to the specific dimensions of complexity evident in the different segments of the dialogues. Close examination of the table illustrates a link co-existing between the cognitive complexity and syntactic complexity of the various segments of the communication tasks. This correlates with Robinson's hypothesis that by increasing the dimensions of task demands along the

resource directing and resource dispersing, it is likely to affect the levels of accuracy, fluency and complexity in producing the target language. It is also likely to influence interaction that incidental learning lead to as well as focus-on-form that is required to enrich the task-based second language environment. The level of accuracy in this instance has been influenced by the syntactic complexity of the sentences of individual phases of the dialogues.

By examining Table 4-4 further, it is evident that in some instances no correlation exists between cognitive complexity and syntactic complexity of the same segment of that specific dialogue. A possible explanation for this mismatch could be because of the task features used to classify the segments as a whole in terms of its complexity. However, if the sentences in each segment are to be further examined carefully, there may be possible evidence that a link does co-exist between the different complexities of sentences. Although, they may be discrepancies with this assumption, the number of instances of this occurrence maintains that this theorized view be accurate.

Table 4-0-4. Combined summary of both cognitive complexity and syntactic analysis of dialogues 1-12

Dialogue no.	Phases	Developmental Complexity	Performative Complexity	Dimension	Syntactic Complexity
1	• Introductory phase	High	High	4	High
	• Pre-examination phase	Low	High	2	High
	• Directive phase	Low	High	2	Low
2	• Introductory phase	Low	High	2	Low
	• Pre-examination phase	High	High	4	High
	• Directive phase	Low	High	2	Low
3	• Introductory phase	Low	High	2	Low
	• Pre-examination phase	High	High	4	High
	• During examination phase	Low	High	2	High
	• Post-examination phase	High	High	4	High
	• Directive phase	Low	High	2	High
4	• Introductory phase	High	High	4	High
	• Pre-examination phase	High	High	4	High
	• Directive phase	High	High	4	High

5	• Introductory phase	High	High	4	High
	• Pre-examination phase	High	High	4	High
	• Directive phase	Low	High	2	High
6	• Introductory phase	Low	High	2	Low
	• Pre-examination phase	Low	High	2	Low
	• During examination phase	Low	Low	1	High
	• Directive phase	Low	High	2	High
7	• Introductory phase	High	High	4	Low
	• Pre-examination phase	High	High	4	High
	• During examination phase	Low	Low	1	High
	• Post-examination phase	High	Low	3	High
	• Directive phase	Low	High	2	Low
8	• Introductory phase	High	High	4	Low
	• Pre-examination phase	High	High	4	High
	• During examination phase	Low	Low	1	Low
	• Directive phase	Low	High	2	Low
9	• Introductory phase	High	High	4	Low
	• Pre-examination phase	High	High	4	High
	• Directive phase	Low	High	2	High
10	• Introductory phase	Low	High	2	Low
	• Pre-examination phase	High	Low	3	High
	• Directive phase	Low	Low	1	High
11	• Introductory phase	High	High	4	High
	• Pre-examination phase	High	Low	3	High
	• During examination phase	Low	High	2	High
	• Directive phase	Low	High	2	High
12	• Introductory phase	High	High	4	High
	• Pre-examination phase	High	High	4	High
	• Directive phase	Low	High	2	High

This section also provides a synopsis of the overall cognitive complexity variables for individual tasks. To grade and sequence the communication tasks, information regarding cognitive complexity,

syntactic complexity as well as language functions are obtained from the above analysis and can be used for the purposes of grading and sequencing in this study. This crucial information can also be used in task manipulation where tasks can be designed to simpler or less complex task versions from the target task versions. In his earlier work on Cognition Hypothesis and task sequencing Robinson (2007: 22) emphasised that task complexity is regarded as the only basis of pedagogic task sequencing. Thereafter, Robinson (2010) advocates the SSARC model as a feasible proposal for pedagogic task sequencing. In other words, tasks should be designed so that simpler task versions can be performed first and subsequently by tasks that gradually increase their cognitive demands to eventually attain the level of the target tasks. The proficiency levels of learners are also essential in the task sequencing and selection process. Tasks can be made simpler or more complex for learners with low or high proficiency levels respectively. Regarding syntactic complexity, using complicated grammar such as complex sentences or sentences with embedded clauses can make tasks more complex. Whereas, using more mono-clausal sentences, sentences learnt as holistic chunks or simple sentences make tasks less complex.

In Table 4-5 below, a synopsis of the task features for all twelve target tasks analysed in terms of their cognitive complexity in this study is illustrated. As discussed in Section 4.2.3, an explanation was provided regarding the clustering of task dimensions according to resource directing (or developmental) dimensions and resource depleting/dispersing (or performative) dimensions. Furthermore, a discussion on Robinson's model (2005) in terms of how the various combinations of the two sets of tasks dimensions can be applied to classify tasks into the four quadrants of Robinson's framework was provided. Table 4-5 below lists the task features of the target tasks used in this study in terms of the +/- classifications as well as the quadrant classification.

Table 4-0-5. Summary of task dimensions of cognitive complexity analysis of dialogues 1-12

Task no.	Phases	Resource-directing (Developmental) Complexity	Resource-dispersing(depleting) Performative Complexity	Quadrant
1	• Introductory phase	-here-and-now -no reasoning -few elements	-single task -planning -prior knowledge	4
	• Pre-examination phase	+here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	2

	• Directive phase	+here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	2
2	• Introductory phase	+here-and-now +no reasoning +few elements	-single task -planning -prior knowledge	2
	• Pre-examination phase	-here-and-now -no reasoning -few elements	-single task -planning -prior knowledge	4
	• Directive phase	+here-and-now +no reasoning +few elements	+single task -planning -prior knowledge	2
3	• Introductory phase	-here-and-now +no reasoning +few elements	-single task -planning -prior knowledge	2
	• Pre-examination phase	-here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	4
	• During examination phase	+here-and-now +no reasoning +few elements	-single task +planning -prior knowledge	2
	• Post-examination phase	+here-and-now -no reasoning -few elements	-single task -planning -prior knowledge	4
	• Directive phase	+here-and-now +no reasoning -few elements	+single task -planning -prior knowledge	2
4	• Introductory phase	-here-and-now +no reasoning -few elements	+single task -planning -prior knowledge	4
	• Pre-examination phase	-here-and-now -no reasoning -few elements	-single task -planning -prior knowledge	4
	• Directive phase	+here-and-now -no reasoning - few elements	-single task -planning -prior knowledge	4
5	• Introductory phase	-here-and-now -no reasoning -few elements	+single task -planning -prior knowledge	4

	• Pre-examination phase	-here-and-now -no reasoning -few elements	-single task -planning +prior knowledge	4
	• Directive phase	+here-and-now +no reasoning +few elements	+single task -planning -prior knowledge	2
6	• Introductory phase	+here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	2
	• Pre-examination phase	+here-and-now +no reasoning +few elements	-single task -planning -prior knowledge	2
	• During examination phase	+here-and-now +no reasoning -few elements	-single task +planning +prior knowledge	1
	• Directive phase	+here-and-now +no reasoning +few elements	-single task -planning -prior knowledge	2
7	• Introductory phase	-here-and-now -no reasoning -few elements	-single task -planning -prior knowledge	4
	• Pre-examination phase	-here-and-now -no reasoning -few elements	-single task -planning -prior knowledge	4
	• During examination phase	+here-and-now +no reasoning -few elements	-single task +planning +prior knowledge	1
	• Post-examination phase	+here-and-now -no reasoning -few elements	+single task -planning +prior knowledge	3
	• Directive phase	+here-and-now +no reasoning +few elements	+single task -planning -prior knowledge	2
8	• Introductory phase	-here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	4
	• Pre-examination phase	-here-and-now -no reasoning	-single task -planning -prior knowledge	4

		+few elements		
	• During examination phase	+here-and-now +no reasoning -few elements	-single task +planning +prior knowledge	1
	• Directive phase	+here-and-now +no reasoning +few elements	-single task -planning -prior knowledge	2
9	• Introductory phase	-here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	4
	• Pre-examination phase	-here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	4
	• Directive phase	+here-and-now +no reasoning +few elements	+single task -planning -prior knowledge	2
10	• Introductory phase	+here-and-now +no reasoning +few elements	-single task -planning -prior knowledge	2
	• Pre-examination phase	+here-and-now -no reasoning -few elements	-single task +planning +prior knowledge	3
	• Directive phase	+here-and-now -no reasoning +few elements	+single task +planning +prior knowledge	1
11	• Introductory phase	-here-and-now -no reasoning -few elements	-single task -planning -prior knowledge	4
	• Pre-examination phase	-here-and-now -no reasoning -few elements	-single task +planning +prior knowledge	3
	• During examination phase	+here-and-now +no reasoning -few elements	+single task -planning -prior knowledge	2
	• Directive phase	+here-and-now -no reasoning +few elements	-single task -planning -prior knowledge	2
12	• Introductory phase	-here-and-now	-single task -planning	4

		-no reasoning -few elements	-prior knowledge	
	• Pre-examination phase	-here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	4
	• Directive phase	+here-and-now +no reasoning +few elements	-single task -planning -prior knowledge	2

As Robinson (2010: 247) reiterates that the sequencing of tasks is exclusively based on cognitive complexity factors, the tasks illustrated in this study can be graded and sequenced in terms of their classification into the different quadrants. Table 4-5 illustrates the twelve target tasks with its associated segments classified into their appropriate quadrants. One of the segments of tasks 6, 7, 8, 10 are categorized as Quadrant 1 tasks and are considered easier than those placed in other quadrants. These task segments, therefore exhibit low levels of performative and developmental complexity. On the other hand, all three segments of task 4 are placed in Quadrant 4, hence this task is considered the most complex as it demonstrates high levels of both developmental and performative complexity. Based on the cognitive complexity analysis in section 4.5, it is evident that most of the target task segments display features of Quadrant 4 and are therefore, related to high developmental and high performative complexity. In this case, the complexity of the tasks were descaled because the dialogues are rather complex. The last part of the cognitive complexity analyses demonstrated the descaling or decomplexification of each of the twelve target tasks, i.e. the less complex or simpler version in terms of the SSARC Model (see section 4.5.1).

In this section, proposals regarding the sequencing of tasks of this study are demonstrated. By adhering to the principles of the SSARC Model (Robinson, 2010), the following example illustrates how the dimensions of task complexity can be carefully chosen and combined in an increasingly complex sequence of pedagogic task versions. The intended target **task 3** is a real-world performance where the medical doctor on duty at a local hospital consults a 15-year old female patient suffering from extreme abdominal pain and vomiting. The task includes eight different sub-tasks needed to be performed that are outlined in the task descriptor. These sub-tasks require the participant, in the role as the doctor, to perform the following in isiZulu:

- Greet the mother of the patient and the patient; } Initiating phase
- Offer assistance; }
- Obtain personal details; }
- Conduct a full history taking; } Pre-examination phase
- Obtain an explanation of the medical condition; }
- Inform the patient about a physical examination; }- During-the-examination phase
- Inform the patient about possible surgery and }- Post-examination phase
- Conclude the interview }- Directive phase

The above sub-tasks are included into the three segments of the dialogue, namely the initiating/introductory phase, diagnostic phase (i.e. the pre-examination, during-the-examination and post-examination phases) and the directive phase. Each phase of the dialogue is descaled accordingly. As discussed earlier, simpler versions of tasks can be designed to omit specific features (such as spatial or causal reasoning or then-and-there) compared to complex ones as indicated in Table 4-6 below. This omission of certain task features refers to the decomplexification process. This specific **task 3** can be descaled by decomplexifying the specific features of cognitive complexity. The descaling and decomplexification processes of this task was illustrated in section 4.5.3.2.

Table 4-6. Task features of Task 3 used in this study

Task no.	Phases	Resource-directing (Developmental) Complexity	Resource-dispersing(depleting) Performative Complexity	Quadrant
3	• Introductory phase	-here-and-now +no reasoning +few elements	-single task -planning -prior knowledge	2
	• Pre-examination phase	-here-and-now +no reasoning -few elements	-single task -planning -prior knowledge	4
	• During examination phase	+here-and-now +no reasoning +few elements	-single task +planning -prior knowledge	2
	• Post-examination phase	+here-and-now -no reasoning	-single task -planning	4

		-few elements	-prior knowledge	
	• Directive phase	+here-and-now +no reasoning -few elements	+single task -planning -prior knowledge	2

Here, the different versions of the task 3 are described and a proposed task sequence is provided. This is then followed by actual versions of the pedagogical task. The **introductory phase** consists of greeting the mother and the patient and offering assistance. **Version 1** of this task is simple on all relevant dimensions of complexity. In this version, the resource dispersing features are manipulated to allow participants planning time. Few elements are included in this task. The task content of greeting and offering assistance is also adjusted so that participants receive adequate prior knowledge to perform this single task. This represents Stage 1 of the SSARC Model (SS –simple, stable stage).

An example of version 1 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You should greet the mother and daughter, introduce yourself as the medical doctor and offer assistance.

Two participants should complete this task. There should be one doctor and one parent (in this case, it is the mother of the patient). Planning time will be provided in order for the learners to discuss how to proceed with the given task. Learners should use appropriate expressions and vocabulary relating to greeting and offering assistance.

The next **version 2** of this task is made more complex on the resource-dispersing dimension. The same task in the introductory phase of greeting the patient and mother as well as offering assistance is performed without any planning time. This can still represent Stage 1 of the SSARC Model (i.e. the SS –simple, stable stage).

An example of version 2 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You should greet the mother and daughter, introduce yourself as the medical doctor and ask about the well-being of each other. The two of you exchange responses for the state of wellbeing. You then offer assistance.

Two participants are required to complete this task. There should be one doctor and one parent or the patient. In this task, neither planning time nor prior knowledge is provided in which the learners can discuss how to approach this task. Learners should utilise useful expressions and phrases during the completion of the task.

The subsequent **version 3** of this task is further manipulated to gradually increase the performative complexity demands of the participants to access their current interlanguage. Again, the same task of greeting and offering assistance is performed but without planning time and to perform multiple tasks and not just a single task. Here the participants are required to greet the patient and the mother, offer assistance. This task represents Stage 2 of the SSARC Model (i.e. A –automatizing stage).

An example of version 3 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You should greet the mother and daughter, introduce yourself as the medical doctor and offer assistance.

Three participants should complete this task. There should be one doctor and one parent (in this case it is the mother of the patient) and the young patient. No planning time will be provided. During the completion of the task, learners should use appropriate expressions and questions phrases. Learners are required to be accurate and fluent.

Version 4 of the task is made more complex on all levels of the resource-dispersing dimension. Here the participants have multiple tasks to perform, i.e. greeting the patient and the mother, offering assistance and obtaining the patient’s personal details. These tasks are to be performed without planning time; the task content is unknown to the participants. This can represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage).

An example of version 4 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You should greet the mother and daughter, introduce yourself as the medical doctor and offer assistance. You are then to obtain the patient’s personal details, name and surname.

Two participants should complete this task. There should be one doctor and one patient. No planning time and prior knowledge will be provided for the learners to discuss how to proceed with the given

task. Learners should try to use appropriate expressions and question phrases relating to greeting and offering assistance as well as identity.

The final **version 5** of this task can also be made complex along the resource directing dimensions. This task can be performed by either simulation or in an authentic consultation, where the participants can describe the events using the past tense, other elements of reasoning or locational and spatial references can be included. This can also represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage) where the learners' current interlanguage meet the demands of the task.

An example of version 5 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You should greet the mother and daughter, introduce yourself as the medical doctor and offer assistance. You are then to obtain the patient's personal details such name, surname and age. Two participants should complete this task. There should be one doctor and one patient. No planning time and prior knowledge will be provided for the learners to discuss how to proceed with the given task. Learners should try to use appropriate expressions and question phrases relating to greeting and offering assistance, identity and age.

The **pre-examination phase** requires the participants to conduct a full history taking and obtain an explanation of the medical condition. **Version 1** of this task is simple on all relevant dimensions of complexity. In this version, the resource-dispersing features are manipulated to allow participants planning time. Few elements are included in this task. The task content is also adjusted so that participants receive adequate prior knowledge to perform this single task. This represents Stage 1 of the SSARC Model (SS –simple, stable stage).

An example of version 1 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already greeted the mother and daughter, introduced yourself as the medical doctor and offered assistance. You have also obtained the patient's personal details such name, surname and age. In this task, you should explore the patient's problem and gather information regarding when did her problem start.

Two participants should complete this task. There should be one doctor and one patient. Planning time and prior knowledge will be provided in order for the learners to discuss how to proceed with the given task. Learners should use appropriate vocabulary.

Version 2 of this task is made more complex on the resource-dispersing dimension. The same task in the pre-examination phase of conducting a full history taking and obtaining an explanation of the medical condition is performed without any planning time. This can still represent Stage 1 of the SSARC Model (i.e. the SS –simple, stable stage).

An example of version 2 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already greeted the mother and daughter, introduced yourself as the medical doctor and offered assistance. You have also obtained the patient's personal details such name, surname and age. In this task, you should explore the patient's problem and gather information regarding when did her problem start.

Two participants are required to complete this task. There should be one doctor and one patient. This task should be completed with neither planning time nor prior knowledge provided. Learners should utilise useful question and answer phrases during the completion of the task.

The subsequent **version 3** of this task is further manipulated to gradually increase the performative complexity demands of the participants to access their current interlanguage. Again, the same task of conducting a full history taking and obtaining an explanation of the medical condition is performed but without planning time and the performance of multiple tasks and not just a single task is required. Here the participants, in the role as the medical doctor is required to ask the patient questions relating to the presenting complaint and in the role of the patient to explain the presenting complaint. This task represents Stage 2 of the SSARC Model (i.e. A –automatizing stage).

An example of version 3 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already greeted the mother and daughter, introduced yourself as the medical doctor and offered assistance. You have also obtained the patient's personal details such name, surname and

age. In this task, you should explore the patient's problem and gather information regarding when did her problem start. You should also enquire about possible pregnancy.

Two participants should complete this task. There should be one doctor and one patient. No planning time will be provided. During the completion of the task, learners should use appropriate questions phrases and appropriate responses should be provided. Learners are required to be accurate and fluent.

Version 4 of this task is made more complex on all levels of the resource-dispersing dimension. In this task, the participants have several tasks to perform, i.e. gathering of information on the presenting complaint from the patient, obtaining an explanation from patient about the medical condition. These tasks are to be performed with no planning time given; and the task content is unknown to the participants. This can represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage).

An example of version 4 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already greeted the mother and daughter, introduced yourself as the medical doctor and offered assistance. You have also obtained the patient's personal details such name, surname and age. In this task, you should explore the patient's problem and gather information regarding when did her problem start. You should also enquire about possible pregnancy.

Two participants should complete this task. There should be one doctor and one patient. Neither planning time nor prior knowledge is provided. The content is unfamiliar to the participants. Learners should try to use appropriate expressions and question phrases relating to the gathering of information.

The final **version 5** of this task can also be made complex along the resource-directing dimensions. This task can be performed by either simulation or in an authentic consultation, where the participants can narrate the presenting complaint using the past tense, other elements of reasoning or locational and spatial references can be included. This can also represent Stage 3 of the SSARC Model (i.e. RC – restructure and complexifying stage) where the learners' current interlanguage meet the demands of the task.

An example of version 5 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already greeted the mother and daughter, introduced yourself as the medical doctor and offered assistance. You have also obtained the patient's personal details such name, surname and age. In this task, you should explore the patient's problem and gather information regarding when did her problem start. You should also enquire about possible pregnancy.

Two participants should complete this task. There should be one doctor and one patient. No planning time and prior knowledge will be provided for the learners to discuss how to proceed with the given task. Learners are required to simulate an authentic consultation that should be accurate and fluent.

In the **during-the-examination phase**, the task requires the participant to inform the patient about the physical examination. **Version 1** of this task is simple on all relevant dimensions of complexity. In this version, the resource dispersing features are manipulated to allow participants planning time. Few elements are included in this task. The task content is also adjusted so that participants receive adequate prior knowledge to perform this single task. This represents Stage 1 of the SSARC Model (SS –simple, stable stage).

An example of version 1 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also used appropriate questions to identify the problem. In this task, you should inform the patient that all is fine and that you wish to check your temperature.

Two participants should complete this task. There should be one doctor and one patient. Planning time and prior knowledge will be provided in order for the learners to discuss how to proceed with the given task. Learners should use appropriate vocabulary.

Version 2 of this task is made more complex on the resource-dispersing dimension. The same task in the during-the-examination phase of informing the patient about the physical examination is performed without any planning time. This can still represent Stage 1 of the SSARC Model (i.e. the SS –simple, stable stage).

An example of version 2 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also used appropriate questions to identify the problem. In this task, you should inform the patient that all is fine and that you wish to check your temperature.

Two participants are required to complete this task. There should be one doctor and one patient. This task should be completed with no planning time provided. Appropriate expressions and vocabulary are required for the completion of this task.

The following **version 3** of this task is slightly manipulated to increase the performative complexity demands of the participants to access their current interlanguage. Here too, the same task of informing the patient of the physical examination is performed but without planning time and to perform multiple tasks. Here the participants, in the role as the medical doctor is required to inform the patient about the physical examination and check the patients' temperature as well as formulate a diagnosis. This task represents Stage 2 of the SSARC Model (i.e. A –automatizing stage).

An example of version 3 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also used appropriate questions to identify the problem. In this task, you should inform the patient that all is fine and that you wish to check your temperature. You are also required to instruct the patient to raise up her arm.

Two participants are required to complete this task. There should be one doctor and one patient. This task should be completed with no planning time provided. Several sub tasks are required in order to complete the main task. Learners are required to use appropriate expressions and vocabulary during the completion of the task.

Version 4 of this task is made more complex on all levels of the resource-dispersing dimension. In this task, the participants have several tasks to perform, i.e. inform the patient about the physical examination, check the patient's temperature and formulate a diagnosis. These tasks are to be performed with no planning time provided; and the task content is unknown to the participants. This can represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage).

An example of version 4 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also used appropriate questions to identify the problem. In this task, you should inform the patient that all is fine and that you wish to check your temperature. You are also required to instruct the patient to raise up her arm in order for you to check the temperature.

Two participants are required to complete this task. There should be one doctor and one patient. Neither planning time nor prior knowledge is provided to learners to complete this task. Learners are required to use accurate vocabulary and fluency is essential for task completion.

The final **version 5** of this task can also be made complex along the resource-directing dimensions. This task can be performed by either simulation or in an authentic consultation where other elements of reasoning or locational and spatial references can be included. This can also represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage) where the learners' current interlanguage meet the demands of the task.

An example of version 5 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also used appropriate questions to identify the problem. In this task, you should inform the patient that all is fine and that you wish to check your temperature. You are also required to instruct the patient to raise up her arm in order for you to check the temperature.

Two participants are required to complete this task. There should be one doctor and one patient. No planning time and prior knowledge will be provided for the learners to discuss how to proceed with the given task. Learners are required to perform this task through simulation or as an authentic consultation that should be accurate and fluent.

The **post-examination** task requires the participant, in the role as the doctor to inform the patient and the parent about the ultrasound procedure and the possible surgical removal of the appendicitis. The task requires the participant to reassure the patient and parent and explain the procedures to follow.

Version 1 of this task is simple on all relevant dimensions of complexity. This version makes allowance for planning time. Few elements are also included in this task. The task content is also adjusted so that participants receive adequate prior knowledge to perform a single task of informing the patient about the ultrasound procedure. This represents Stage 1 of the SSARC Model (SS –simple, stable stage).

An example of version 1 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also gathered sufficient information regarding the patient's problem. A physical examination was also conducted. This task entails an explanation and planning. You should inform the patient that her temperature is high.

Two participants should complete this task. There should be one doctor and one patient. Planning time and prior knowledge will be provided in order for the learners to discuss how to proceed with the given task. Learners should use appropriate vocabulary.

Version 2 of this task is made more complex on the resource-dispersing dimension. The same task in the post-examination phase of informing the patient about the medical condition is performed without any planning time. This can still represent Stage 1 of the SSARC Model (i.e. the SS –simple, stable stage).

An example of version 2 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also gathered sufficient information regarding the patient's problem. A physical examination was also conducted. This task entails an explanation and planning. You should inform the patient that her temperature is high and that an ultrasound procedure will be required.

Two participants should complete this task. There should be one doctor and one patient. No planning time will be provided for the completion of the task. Learners should use appropriate vocabulary.

Version 3 of this task is then manipulated to increase the performative complexity demands of the participants to access their current interlanguage. The same task of informing the patient about the

ultrasound needs to be performed without planning time. In addition, the participants are required to perform multiple tasks such as reassuring the patient and the parent and explaining the procedure to follow the physical examination. Here the participants, in the role as the medical doctor is required to reassure the patient and the parent and explain the procedure to follow the physical examination. This task represents Stage 2 of the SSARC Model (i.e. A –automatizing stage).

An example of version 3 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also gathered sufficient information regarding the patient's problem. A physical examination was also conducted. This task entails an explanation and planning. You should inform the patient that her temperature is high and that an ultrasound procedure will be required.

Two participants are required to complete this task. There should be one doctor and one patient. This task should be completed with no planning time provided. Several sub tasks are required in order to complete the main task. Learners are required to use appropriate expressions and vocabulary during the completion of the task.

The subsequent **version 4** of this task is made more complex on all levels of the resource-dispersing dimension. Here, the participants have several tasks to perform, i.e. inform the patient about the ultrasound procedure and blood test, reassure the patient and parent about the medical condition, and explain the procedure to follow the physical examination. These tasks are to be performed with no planning time provided; and the task content is unknown to the participants. This can represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage).

An example of version 4 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also gathered sufficient information regarding the patient's problem. A physical examination was also conducted. This task entails several sub-tasks relating to explanation and planning. You should inform the patient that her temperature is high and that an ultrasound procedure will be required. You are also required to inform the patient that she will need to do a blood test.

Two participants are required to complete this task. There should be one doctor and one patient/parent. Neither planning time nor prior knowledge is provided in order to complete this task. Several sub tasks are required in order to complete the main task. Learners are required to use appropriate expressions and vocabulary during the completion of the task.

The final **version 5** of this task can also be made complex along the resource-directing dimensions. This task can be performed by either simulation or in an authentic consultation where other elements of reasoning or locational and spatial references can be included. Here, the participant in the role of the doctor can give reasons as to why the procedures need to be done. This can also represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage) where the learners' current interlanguage meet the demands of the task.

An example of version 5 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have already initiated the session by greeting and introducing yourself. You have also gathered sufficient information regarding the patient's problem. A physical examination was also conducted. This task entails several sub-tasks relating to explanation and planning. You should inform the patient that her temperature is high and that an ultrasound procedure will be required. You are also required to inform the patient that she will need to do a blood test. Furthermore, you are required to reassure that patient and explain the procedure of the tests. Lastly, you are required to instruct the nurse to take the patient to the X-ray room.

Three participants are required to complete this task. There should be one doctor, one patient/parent and the nurse. No planning time and prior knowledge will be provided for the learners to discuss how to proceed with the given task. Learners are required to perform this task through simulation or as an authentic consultation that should be accurate and fluent.

In the **directive phase**, the task requires the participant, in the role as the doctor to instruct the patient to return to him/her after the ultrasound procedure.

Version 1 of this task is simple on all relevant dimensions of complexity. This version makes allowance for planning time. Few elements are also included in this task. The task content is also adjusted so that participants receive adequate prior knowledge to perform a single task of instructing

the patient to return after the ultrasound procedure. This represents Stage 1 of the SSARC Model (SS –simple, stable stage).

An example of version 1 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have initiated the session by identifying the reason for the consultation. You have also gathered information relating to the patient's medical condition. This exploration was then followed by a physical examination of the patient and informing the patient with the necessary tests and scan. In this task, you are required to instruct the patient to return to you to receive the results of the ultrasound.

Two participants are required to complete this task. There should be one doctor and one patient/parent. Planning time will be provided in order for the learners to discuss how to proceed with the given task. Learners should use appropriate expressions and vocabulary.

Version 2 of this task is made more complex on the resource-dispersing dimension. The same task in the directive phase of instructing the patient to return to the doctor after the scan is performed without any planning time. This can still represent Stage 1 of the SSARC Model (i.e. the SS –simple, stable stage).

An example of version 2 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have initiated the session by identifying the reason for the consultation. You have also gathered information relating to the patient's medical condition. This exploration was then followed by a physical examination of the patient and informing the patient with the necessary tests and scan. In this task, you are required to instruct the patient to return to you to receive the results of the ultrasound.

Two participants are required to complete this task. There should be one doctor and one patient. This task should be completed with no planning time provided. Appropriate expressions and vocabulary are required for the completion of this task.

The subsequent **Version 3** of this task is further manipulated to increase the performative complexity demands of the participants to access their current interlanguage. The same task of instructing the

patient to return to the doctor after the ultrasound needs to be performed without planning time. Additional tasks can be included as well. This task represents Stage 2 of the SSARC Model (i.e. A – automatizing stage).

An example of version 3 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have initiated the session by identifying the reason for the consultation. You have also gathered information relating to the patient's medical condition. This exploration was then followed by a physical examination of the patient and informing the patient with the necessary tests and scan. In this task, you are required to instruct the patient to return to you to receive the results of the ultrasound.

Two participants are required to complete this task. There should be one doctor and one patient. This task should be completed with no planning time and no prior knowledge provided. Learners are required to use appropriate expressions and vocabulary during the completion of the task.

The following **Version 4** of this task is made more complex on all levels of the resource-dispersing dimension. Here, the same task of instructing the patient to return to the doctor after the ultrasound as well as other tasks such as giving directions to the pharmacy can be performed but without planning time provided; and the task content unknown to the participants. This can represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage).

An example of version 4 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have initiated the session by identifying the reason for the consultation. You have also gathered information relating to the patient's medical condition. This exploration was then followed by a physical examination of the patient and informing the patient with the necessary tests and scan. In this task, you are required to instruct the patient to return to you to receive the results of the ultrasound.

Two participants are required to complete this task. There should be one doctor and one patient. This task should be completed with no planning time and no prior knowledge provided. Learners are required to use appropriate expressions and vocabulary during the completion of the task. Learners are also required to provide a few more instructions to the patient.

The final **version 5** of this task can also be made complex along the resource directing dimensions. This task can be performed by either simulation or in an authentic consultation where other elements of reasoning or locational and spatial references can be included. Here, the participant in the role of the doctor can give reasons as to why the patient is required to see the doctor after the scan. This can also represent Stage 3 of the SSARC Model (i.e. RC –restructure and complexifying stage) where the learners' current interlanguage meet the demands of the task.

An example of version 5 of the pedagogic task:

You are the medical doctor on duty at the hospital, when a mother arrives with her 15-year-old daughter. The daughter is experiencing severe abdominal pain. She is also vomiting and did not sleep all night. You have initiated the session by identifying the reason for the consultation. You have also gathered information relating to the patient's medical condition. This exploration was then followed by a physical examination of the patient and informing the patient with the necessary tests and scan. In this task, you are required to instruct the patient to return to you to receive the results of the ultrasound. You are also required to explain the results to the patient.

Three participants are required to complete this task. There should be one doctor, parent of the child and one patient. This task should be completed with no planning time and no prior knowledge provided. Learners are required to use appropriate expressions and vocabulary during the completion of the task. Accuracy and fluency are essential, as learners are required to perform this task through simulation or as an authentic consultation.

From the example analysed above, it is argued that the tasks are designed to slowly build on one another. Each version of a task serves as a lesson that can be spread over several sessions in a classroom. The different versions of the intended target **task 3** of a medical doctor on duty at a local hospital consulting a 15-year old female patient suffering from extreme abdominal pain increased gradually in complexity following the sequencing principles of the SSARC model. The design of these tasks can create a space for real communicative needs and provide positive reinforcement at each time a task is performed and successfully completed. By duplicating the interactive demands of the target task, each time from simple to complex task versions that are performed successfully can embed memory, rehearsal and further enhancement can be in the second language (Robinson, 2010: 254). According to Robinson (2011a: 17-18), the rationale for performing tasks without planning time, for instance, can lead to promoting control over the current interlanguage resources whereas tasks performed with increases along the resource-directing variants can promote analysis and understanding of how the second language can be used to describe events, intentions and mental states. Consequently,

learners' attention may be drawn to form by the use of vocabulary required or the sentences needed when communicating meanings in a second language (Gilabert et al., 2011). Taking the above factors regarding the manipulation of cognitive complexity and the effects on tasks performance into consideration, they can inform decisions on how to sequence tasks in a syllabus. This process of sequencing and grading of tasks can be applied to all the target tasks analysed in section 4.5. Various frameworks proposed by Skehan, Robinson and Ellis, on the grading and sequencing of tasks were discussed in Section 2.3.5 of Chapter 2. This study, however, draws on proposals made by Robinson (2005 & 2007 & 2010), and has been specifically used for analysing the target tasks according to the cognitive complexity analyses.

4.7 Conclusion

The focus of this chapter was to explore the use of cognitive complexity analysis for the purposes of grading and sequencing tasks in an isiZulu specific task-based CALL syllabus design for health sciences students. It also demonstrated how the doctor-patient communication interviews were structured into the different segments according to the Calgary-Cambridge guide. Based on the Calgary Cambridge framework, this chapter described how discourse analysis could be used to analyse the isiZulu communicative tasks in order to determine the communicative purpose. The language functions in conducting a medical interview were also used to ascertain the communicative purpose. Furthermore, the three types of elements involved in the grammatical structure of a task, i.e. task-naturalness, task-utility and task-essentialness (see Chapter 2), allow the participants to classify the language functions accordingly. It also allows learners to differentiate the degree of importance of the variants evident in language functions. The language functions evident in the communicative target tasks used in this study involve mostly task-essentialness. Hence, a particular grammatical structure is required in order to perform the task successfully (Loschky & Bley-Vroman, 1993). The degree of involvement of grammar and task is discussed in Chapter 5.

The isiZulu target tasks investigated in this chapter were analysed in three different methods. Before the analyses of each target task, however, a task descriptor outlining the various elements required for completing the task, introduced each task. Thereafter, the target tasks were analysed in terms of the task complexity analyses, namely, interactional complexity (Pica et al., 1993), cognitive complexity (Robinson, 2005 & 2007 & 2010) and syntactic complexity (Bartning et al., 2015; Foster et al., 2000) all of which were explained in the first part of this chapter.

Concerning the interactional complexity analysis, the type of task identified in this chapter were mostly examples of information gap tasks, according to Pica et al's (1993) task typology framework. Furthermore, most of the target tasks contained questions and answers required when gathering information during a medical interview, which are typical examples of information gap tasks (Pica et al., 1993). As this type of task involves greater interaction, it can therefore be concluded that the communicative target tasks exhibit high interactivity. There are also examples of problem-solving and decision-making tasks evident in this chapter. With these task types, opportunities for interaction are minimum and hence there is low interactivity evident. It was explained that task types that illustrate high interactivity would generate more opportunities for second language learners in developing their communicative skills, which they can communicate in their "working world".

Regarding the analyses of the target tasks according to their cognitive complexity, Robinson's 'Triadic componential framework which is based on his Cognition Hypothesis (2005 & 2007) and the Stabilize, Simplify, Automatize, Restructure and Complexify (SSARC) Model (2010) provided in-depth knowledge related to cognitive complexity of tasks. It was concluded that certain task demands should be adhered to for the successful completion of tasks. It was emphasised that, according to Robinson (2010 & 2011a), it is necessary to present learners with simple tasks at the initial stage of the learning process for optimal use in task-based second language learning. The complexity of tasks can then be increased for promoting the cognitive complexity of second language learners and then to assimilate the target tasks (Baralt et al., 2014: 18). It was explained that while simple tasks provide learners the opportunity to focus on fluency of production, complex tasks would allow learners to focus on accuracy, and complexity of their output. Furthermore, complex tasks could lead to greater interaction as well as more uptake of language sentences, which can be identified by focus on form activities during interaction and second language learning (Robinson, 2011a).

With respect to syntactic complexity, this chapter described how speech units were identified in the various target tasks used in this study. The analysis of speech, in terms of Foster et al's (2000) Assessment of Speech Units, demonstrated examples of a high level of syntactic complexity in most of the segments of the target tasks used in this study. Examples that illustrated a low level of syntactic complexity were evident in a few introductory phases as these segments contained simple sentences; most of them being mono-clausal sentences and sentences learnt as holistic chunks. On the other hand, the diagnostic and directive phases consisted mostly of complex sentences. In addition to invoking Foster et al.'s speech unit analysis to the target tasks at sentential and clausal levels, the target tasks also included a syntactic analysis at phrasal level in terms of the taxonomy model of L2 linguistic

complexity constructs proposed by Bulté and Housen (2012) and later adapted by Bartning et al. (2015).

The overall information obtained from the syntactic complexity analysis can be used in conjunction with data retrieved from the cognitive complexity analysis of the target tasks. Furthermore, it was explained that the information obtained from both the cognitive and syntactic complexity analyses can be used to inform decisions regarding the grading and sequencing of tasks. This information is necessary for the design of pedagogical tasks with specific attention to focus on form which is discussed in the next chapter.

CHAPTER 5

PEDAGOGICAL TASK DESIGN FOR CALL DOCTOR-PATIENT COMMUNICATION IN TASK-BASED SYLLABUS FOR ISIZULU

5.1 Introduction

This chapter explores insights into different theories and key issues discussed in previous chapters of this study. It also presents an account of how these theories may be invoked in the practice of CALL pedagogic task design in a task-based doctor-patient communication syllabus for isiZulu. In chapter 2, a broad overview of the key issues relating to task-based language learning and teaching research were discussed. This chapter draws particular attention to the main issues of task-based language teaching that relate to the practise of pedagogic CALL tasks. These issues include designing pedagogical tasks based on a language needs analysis conducted with the medical students at the University of KwaZulu-Natal (UKZN) in South Africa. Satisfying the needs of health sciences students entails designing a syllabus whose core objective should be a comprehensive teaching system of teaching mode and methodology, which is grounded by second language teaching theories and takes isiZulu language knowledge, application techniques and learning strategies as its main content (Gai, 2014). The framework presented in this chapter considers task complexity analyses of isiZulu doctor-patient tasks and the grading and sequencing of such tasks according to their cognitive and syntactic complexity as part of its design. The scaling of tasks in terms of its cognitive and syntactic complexity are revisited. In addition, this chapter considers the importance of individual differences when designing instructional tasks. Further analysis relating to the implementation of the doctor-patient tasks, the three stages of pre-task stage, during-task stage and post-task stage (Skehan, 1996; Willis, 1996) are also presented in this chapter.

In Chapter 3, key concepts and issues concerning CALL research were explored. Of particular interest was the design-based research (DBR), which proved to be the most appropriate paradigm to be adopted within this study. The rationale for the adoption of the DBR approach was motivated for especially the reason that it relates well to task-based language learning and teaching. A study by Steenkamp (2009) also invoked the design-based research approach to a proposed procedure for a design of an isiXhosa task-based second language multimedia curriculum for student teachers. As noted in Chapter 3, one of the characteristics of the DBR approach was the continuous cyclic process of design, implementation, evaluate and redesign of the approach to research. This constantly changing nature of the DBR approach allows for developing innovations after analysis and evaluation, thus making this research

suitable for invoking multiple theories of second language teaching in task design for practical learning environments based on real-world or target tasks. Encouragingly, this approach provides researchers a platform to explore not only “technology artefacts” but also the learning environment in which it operates (Yutdhana, 2005: 175). Hence, both products and the actual learning processes in CALL second language teaching and learning are equally important. Drawing on the advantages of the DBR approach as providing a framework for analysis of a comprehensive process involved in CALL second language teaching and learning classrooms, further motivation for the adoption of the DBR approach to this study is evident. The fact that the DBR approach places emphasis on the actual development of the CALL syllabus design and the implementation thereof as well as the technology used in the actual language learning processes makes this approach best suited for a second language specific purposes courses.

Section 3.6.2 of Chapter 3 provided an overview on the framework of technology-mediated TBLT proposed by González-Lloret & Ortega (2014). This framework is based on a mutual relationship shared between TBLT and CALL. As noted, this section outlines a model of a CALL design that has been informed by principled theories of second language acquisition, task-based language learning and teaching explained in Chapters 2 and 3. It is also informed by the framework proposed by González-Lloret & Ortega and is contextualised within a DBR approach. Moreover, the concept of affordances in terms technological, educational and language affordances should also be understood and relate to CALL applications; however challenging might be the process. Taking on an ecological approach to CALL design, Blin (2016: 54) (see Chapter 3) notes that language learning in a technology-based learning environment cannot be confined to just technological and interaction-design dimensions as it is a dynamic and complex human activity.

Invoking the research of Skehan (1996), Ellis (2003a), Robinson (2010) and Long (2015), focus is also placed on the grading and sequencing of tasks in a task-based learning and teaching syllabus design within an integrative CALL environment. Particular attention is given to how enhanced input and focus of form can be incorporated in CALL designs (Chapelle, 2003). The three-stage approach of TBLT implementation is revisited by including focus on form within a CALL environment. Studies such as ‘En Busca De Esmeraldas’ (Gonzalez-Lloret, 2003) and ‘The European Digital Kitchen Project’ (Seedhouse et al., 2014), which merge pedagogy and technology, specifically TBLT and CALL in their design methodology have indicated how digital technology can be successfully implemented based on methodological principles and within the three-stage approach of task-based language learning. Other important elements related to CALL such as learner autonomy and individual

differences are considered. In Chapter 3, the importance of encouraging learners to actively contribute to their learning process was emphasised (Gai, 2014). In the following sub-sections, an outline is given of a framework at a design level that has been informed by principled theories discussed in preceding chapters.

5.2 Design principles for task-based isiZulu CALL design

A range of design principles need to be considered within a task-based language teaching CALL design. However, this study considers particularly issues related to focus on form. In order to create the TBLT-CALL activities that integrate focus on form in a communicative manner, effective task design should be based on principled theories of second language acquisition. Therefore, this study is based on methodological principles of language teaching proposed by Doughty and Long (2003) and González-Lloret & Ortega's (2014) framework for a technology-mediated TBLT. Three of the ten methodological principles (see Chapter 2, section 2.6) have been selected as guidelines in the design of the language teaching material. These principles include (1) use tasks and not texts as units of analysis, (2) elaborate input or provide rich input and (3) focus on form (Long, 2015: 300). This chapter invokes as a guideline to create a task-based CALL activity, the five essential features outlined by González-Lloret & Ortega's (2014) technology-mediated TBLT framework (see Chapter 3, section 3.6.2). These include (1) focus on meaning, (2) goal-oriented tasks, (3) learner-centred tasks, (4) reflective learning enhanced and (5) holistic and real-world language use and occurrences (González-Lloret, 2014: 5-9). The following sub-sections discuss the steps considered in the design of a TBLT-CALL language-learning syllabus.

5.2.1 Step 1 – the needs analysis stage

A series of steps and processes involved in the design of tasks for use in a task-based isiZulu-specific CALL environment is described in this section. The initial phase involves conducting a needs analysis to identify the communicative language and technological needs of medical students learning isiZulu as a second/additional language as the University of KwaZulu-Natal (UKZN), South Africa. As explained in Chapter 2, conducting a needs analysis involves a sophisticated process taking into consideration several important elements (Basturkmen, 2006 & 2010; Garcia Mayo, 2000; Hyland, 2009; Long, 2005 & 2015). This process not only considered the needs of the health sciences students learning isiZulu but included other entities as well. The target tasks in Section 4.5 of Chapter 4 were based on the needs of several role-players, i.e. interviews were conducted with fourth to sixth year

MChB students of the Nelson R Mandela School of Medicine at the University of KwaZulu-Natal to identify their communicative and technological needs. Regarding the interviews with students, a selection of ten students, both mother-tongue isiZulu language students as well as non-mother tongue speaking students were invited to voluntarily participate in the interview (see Appendix 1). Being able to build on the communicative skills acquired in the first year of study was essential for the non-mother tongue students as they consult in their real clinical world. Simulating a real-life medical environment for the students is emphasised in order to engage meaningful doctor-patient communication (Datondji, 2017). Thus, clinicians were consulted for their input and expertise on the most common medical conditions experienced amongst patients. In addition, essential to needs analysis is the inclusion of technological requirements as explained in Section 3.6.2.1 of Chapter 3. In technology-mediated task-based language teaching, identifying what innovations, technological tools and training are appropriate for a syllabus design should be considered (González-Lloret & Ortega, 2014). It was cited earlier in a previous study, how the use of video technology enhanced isiZulu communication and language and cultural skills (Diab et al., 2016). A study by Singh and Gokool (2018) also explored the use of the quiz tool in Moodle as part of an assessment rigour. The current study reinforces these technological advances highlighted in these previous studies and considers the mandatory inclusion of technological tools such as Moodle, which was implemented in 2014 at UKZN. Thus, this study also considered the institution's technological need as part of the needs analysis. Moreover, the need analysis was also guided by the Language Policy Framework for South African Higher Education (Council on Higher Education [CHE], 2001), Policy on Language Services for the National Department of Health (Department of Health, 2015) and the UKZN Language Policy and Plan (2006), which makes allowance for vocational-specific isiZulu courses.

Having considered the language needs of all entities mentioned above, the technological needs of both the language teacher and learners need to be addressed. It was explained in Section 3.6.2 of Chapter 3 that the following factors relating to the teachers' digital literacies, readiness and enthusiasm as well as their ease and attitude toward introducing technology into their classroom has a significant influence to which technology-mediated TBLT is to be implemented (González-Lloret & Ortega, 2014). Similarly, learners' digital literacies and access to the technological tool and support has an effect on the completion of the task. In the UKZN context, training academics to implement Moodle within their disciplines has been implemented since its inception. However, the basic training provided, does not include training of the quiz tool featured on Moodle. Many academics have been self-trained or tutored by colleagues, an issue that has been raised by Son (2014). These factors are therefore important to be considered in the process of the needs analysis.

5.2.2 Step 2 – identifying the main target tasks

Step 2 involved identifying the main target tasks, which was based on the authentic and semi-authentic doctor-patient communication. This step reinforces the first methodological principle of TBLT – use task, not text, as the unit of analysis (Long, 2015: 305). Whilst one of the communication tasks was an authentic recording between a final year medical student and the isiZulu-speaking patient, the other eleven target tasks were simulated doctor-patient communication by fifth year medical students who have already had the experience of clerking patients at local hospitals. Although the target tasks are simulated for the purpose of this study, they do represent the real-working world of medical practitioners. Moreover, the content, which was verified by a clinician, confirmed that the simulated dialogues also incorporated communication process skills that are usually evident in doctor-patient communication in English. The overall content of the main target tasks as analysed in chapter 4 are complex for beginner learners with low-proficiency levels in isiZulu. Long (2015) refers to these target tasks as the “raw input data” for a TBLT syllabus design. In order for learners to reach the outcome of these main target tasks, they will require the necessary skills. Hence, from these main target tasks will derive target task-types and subsequently the design of pedagogic tasks. Pedagogic tasks are tasks that both language teachers and learners use as part of classroom activities and will need to be selected and graded accordingly. The process of sequencing and grading of tasks is discussed in subsequent sections.

5.2.3 Step 3 – analysis of target tasks

This stage involved analysing the authenticity of the target tasks provided in Phase 2. As explained in Chapter 4, a four-step analysis of task complexity was considered. These included a task typology within interactional complexity, cognitive complexity and syntactic complexity and the descaling of the target tasks. Discourse analytic moves were also represented by invoking language functions, e.g. [giving instruction]. The language functions illustrated in each communication task represented the communicative purpose of the respective target task segments. The language functions identified in the task provides the syllabus designer with information on whether task segments are classified in terms of task-naturalness, task-utility or task-essentialness. Moreover, the syllabus designer is given a broad representation of the language variety that isiZulu second/additional speaking health practitioners may need when communicating with their isiZulu-speaking patients and their families. These language structures are also required for the purposes of enhanced input and focus on form elements of pedagogic tasks and activity design discussed in section 3.6.4 of Chapter 3.

In the first set of analysis of Step 3, each target task was initially presented with a task descriptor that describes precisely what communicative needs have to be achieved within each task. The framework by Pica et al. (1993), as explained in section 2.3.4.4 of the chapter 2 was employed to analyse interactional complexity and identify the task typology. The purpose of the interactional complexity analysis was to determine the interactional demands tasks place on learners. Closely linked to Robinson's interactive factors under the task condition dimension, the interactional analysis provides the syllabus designer information on whether tasks are open or closed, one-way or two-way or convergent or divergent that have consequences for the interactional demands on learners completing a task. The data on the interactional analysis, obtained in this study to grade and sequence tasks is discussed further in Step 5.

The second type of analysis considered part of Step 3 of the design procedure concerned the cognitive complexity analysis of each of the simulated main target tasks. Based on Robinson's Triadic Componential Framework (2005 & 2007) and the SSARC model (2010), the analysis is essential for the purposes of grading and sequencing of tasks. The cognitive complexity analysis of tasks in the previous chapter explained the process of grading and sequencing of tasks by a manipulation process of either increasing or decreasing the resource directing or resource-dispersing dimensions of Robinson's Cognition Hypothesis (Robinson, 2005 & 2007). Given the inherent complexity of target tasks, these can be descaled by producing simpler versions of the target tasks and then gradually increasing the versions to more complex ones. Thus, the classification of tasks in terms of the Robinson's framework (i.e. the four quadrants) ensures that the syllabus designer grades the tasks according to the appropriate level of cognitive complexity of the task. It was argued that tasks with low cognitive complexity would be ideally placed at the beginning of a course.

Robinson (2010) proposes task complexity as the operational basis for the classification of target task demands, followed by designing pedagogic tasks based on that classification and then finally sequencing tasks. He also proposes the SSARC Model (Robinson, 2010 & 2011a) for the purpose of task design, and endorses matching the demands of a target task to the variables of task complexity, by increasing the resource dispersing dimensions of a task first, e.g. by reducing planning time and prior knowledge and by requesting learners to perform multiple tasks. Thus, the cognitive complexity of tasks is gradual by allowing learners to gain access and control of their current interlanguage. Secondly, gradually increasing the complexity of resource directing variables of the task is done in order to enhance learners' accuracy and complexity of their output. Such factors provide learners the opportunities to focus their attention on linguistic features. Both Robinson (2010 & 2011b) and Skehan

(2003) propose that task features along the resource-directing dimensions should be adjusted in such a manner that learners can focus more attention on accuracy and complexity of their language production that will give rise to opportunities so that learners are forced to focus on form. As was discussed in Chapter 2, focus on form is believed to prompt learners to notice their input, which has been argued is essential for inducing uptake and recasts. More discussion on the insights obtained from this research to grade and sequence tasks is provided below in Step 5.

The decomplexification or descaling of tasks was considered as part of the third kind of analysis proposed in Step 3. Here, target tasks were manipulated in order to make them cognitively complex. In Section 4.6 of the previous chapter, it was demonstrated how task features along the resource-dispersing and resource-directing dimensions were adjusted so that tasks can be made less complex.

Syntactic complexity of tasks in terms of an analysis of speech units in the various tasks is considered the fourth kind of analysis proposed in Step 3 at the design level. This type of analysis, based on Foster et al.'s (2000) Analysis of Speech Unit Model is essential in identifying the syntactic complexity of the speech units represented by the sentences in the different target tasks and is therefore used for the grading and sequencing of tasks. The taxonomy model of complexity construct proposed by Bulté and Housen (2012) and then later adapted by Bartning et al. (2015) is also considered to identify salient occurrences of nominal modifiers in the communication target tasks. In addition to the grading and sequencing process, syntactic analysis acts as an indicator whereby the syllabus designer can gauge the type and level of language learners will be using in a specified target communication environment. This data is essential for consideration by the teacher as it determines the design of the classroom activities and pedagogic tasks, which is revisited in Step 4 below. Ellis (2003a) emphasises that it is important to consider the syntactic complexity of tasks during the grading and sequencing of tasks. As explained in Section 2.3.5.3.1 of Chapter 2, Ellis (2003a) reiterates that the amount of subordination in the syntax, influences the code complexity of a task. Also discussed in Chapter 2 was the suggestion of using input elaboration techniques as opposed to merely simplification where tasks are considered too syntactically complex for learners' level of understanding (Long, 2015). Factors relating to input elaboration techniques as well as other input enhancement methods, especially in a CALL environment are revisited later in section 5.3 of this chapter.

The data collected and analysed from the above four analyses provides the syllabus designer with an outline of the language features that learners are likely to encounter in their real-world environment. The language functions obtained from the task description specification (TDS) constitute the main

lesson content and topic selection to be used in the syllabus design. The use of such information from the TDS as classroom activities and tasks will ensure that learners are exposed to language, which closely resemble that which they are likely to use in their working world they are in training for. Data obtained from the cognitive and syntactic complexity analyses of tasks can be implemented in the process of grading and sequencing of tasks. The information obtained from the descaling of tasks can also be used to grade and sequence tasks, which subsequently follows below.

5.2.4 Step 4 – Pedagogic task design

Having identified the language and technological needs of UKZN medical students and medical experts consulted, the various health and education policies on language and analysed the communication texts in terms of its complexity, Step 4 of the design procedure is on pedagogic task design. Pedagogic tasks are generally considered as less complex, simpler versions of the target-task type (Long, 2015). It was argued that the complexity of pedagogic tasks and not linguistic complexity can be gradually increased (Long, 2015; Robinson, 2010). It was illustrated in the previous chapter how target tasks can be made simpler by dividing the main task into simpler sub-tasks. However, in order to design pedagogic tasks, information relating to syntactic complexity and language structures are essential to consider, specifically with an emphasis on incorporating focus on form and input enhancement. As discussed in Chapter 2, the inclusion of focus on form through use of grammar-based communicative tasks is essential for learners to enhance their second language acquisition (Keck & Kim, 2014; Nassaji & Fotos, 2011). It was also noted that when task features along the resource-directing dimensions are manipulated in a particular manner, learners could focus more attention to accuracy and complexity of their language production, thus prompting learners to focus on form. Several options on achieving focus on form in a communicative way within task-based language teaching were highlighted in Chapter 2. The benefits of including focus on form in a LSP syllabus design for isiZulu doctor-patient communication has also been noted. In Chapter 3, it was mentioned how input is seen as valuable source of language learning resources in a CALL environment allowing learners to focus on form.

A review of the various options of input enhancement was discussed in Section 3.6.4 of Chapter 3. Three methods of input enhancement were considered, namely, input salience, input modification and input elaboration. Input salience can be made possible by allowing learners to notice the targeted form or language structure. In order to achieve input salience, they can be marked by various options such as highlighting the structures using the font format, underlining words or using colour coding or

different font types and sizes. Also noted earlier that input salience can be achieved through repetition and more input frequency of the targeted language items. An increased frequency level and repetition is likely to afford learners the opportunity to practise and reinforce the targeted language structures, which gradually leads to greater noticing and uptake for successful acquisition to be attained. The language structures and functions used in the analysis of the authentic target tasks can provide the syllabus designer with essential information regarding how to achieve input salience. If language structures are of particular interest or importance in a task as identified in the syntactic analysis, then these targeted structures or vocabulary can be made more salient in that task.

Input modification was shown to be the second method of input enhancement, whereby input can be altered so that it can be made more accessible and understandable to learners. Modifications built into the design of CALL tasks include the use of images or video clips to assist in explaining meaning of a selected text or lexical item. A hyperlink or a pop-up window feature could also provide synonyms, glossaries, definitions, translations in the learners' first language when the cursor hovers over a selected word. A further kind of modification can also be shown in changing sentence structures and vocabulary that match to the learners' current level of development. The syntactic complexity analysis undertaken in this study is most beneficial for the purposes on input modification. Detailed evidence regarding syntactic complexity from the syntactic complexity analysis is provided such as the tense and mood of the language structures as well as information on the complex compound and subordinate clauses. During the design stage of a CALL task, the above information can assist in modifying the text. The use of shorter sentences, reducing embedded sentences, replacing technical terms with less difficult vocabulary or limiting idiomatic expressions are some examples that can achieve a simplified and modified version of a text.

Chapelle (2003) described input elaboration as the third option of input enhancement which involves adding phrases and clauses to an original text in order for learners to understand the text. It was explained that elaborated rather than simplified versions of texts should be offered. The rationale is that structural and lexical complexity remain intact in the process of elaboration, thus providing learners with input. However, depending on the proficiency level of learners, especially learners at a beginner level, simplifying texts could help learners gain more access to them. Long (2015) reiterates this point stating that simplifying pedagogic tasks is based on consideration of which target tasks have been earmarked for specific groups and on learners' proficiency level. Decisions pertaining to which text are to be elaborated on or simplified depend on the information provided in Step 3 of the design

phase, i.e. information retrieved from the discourse analysis, language functions and the syntactic analysis evident in the text.

Essentially, the pedagogic task should be designed in such a manner to fully maximise the potentialities of the selected technology. In other words, what cannot be achieved in a pen and paper classroom context should at least be attempted in a CALL environment (González-Lloret & Ortega, 2014). Integrating rich and authentic input such as videos, simulations and games are a few examples, which create a platform for learners themselves to engage with the language and technology in a creative way in order to complete a task (Lai et al., 2013; Scholz & Schulze, 2017). The use of simulated communication tasks analysed in Chapter 4 can be used in developing task-based CALL pedagogic tasks.

5.2.5 Step 5 – Grading and sequencing pedagogic tasks

Having selected the target tasks as units of analysis, analysed the tasks according to their task complexity and designed pedagogic tasks, the next phase, that is phase 5 of the design process entails the grading and sequencing of tasks to form a task-based CALL syllabus. This study examined three taxonomies for grading and sequencing tasks, which can be found in section 2.3.5 of Chapter 2. The framework by Skehan (1996) proposed three factors, including the code complexity, cognitive complexity as well as communicative stress which he points out should be taken into account when grading and sequencing tasks. Skehan (1996) also emphasises that it is necessary for tasks to be selected carefully and appropriately aligned to the level of difficulty. Baralt et al (2014a: 9) note that even though Skehan provides the most comprehensive proposal along with several reflections on classroom application, it does not seem to reflect a “principled set of criteria for sequencing”. However, he does emphasize the aspect of methodology for the successful implementation of task-based instruction and maintains his position regarding the three phases of pre-task, task and post-task activities (Baralt et al., 2014a; Skehan, 1996).

Ellis’ proposals for grading and sequencing of tasks, which was discussed in Section 2.3.5.3 of Chapter 2, consists of four criteria, i.e. input, conditions, processes and outcomes. Ellis’ view on task complexity is commensurate with Robinson’s as well as with that of Skehan, arguing that task complexity can be modified by methodological procedures that teachers can use when teaching a task (Baralt et al., 2014a). It was pointed out that Ellis’ main argument on how to sequence tasks was to initially identify the cognitive level of an individual task and then apply the criteria he proposes to

measure the reliability of its assessment. He viewed task sequencing from ‘easy to difficult’ and proposes that this way of grading can inform how tasks are sequenced into a lesson and a syllabus. Although Ellis’ framework does not provide a guideline or empirical evidence for how to sequence tasks, he maintains that cognitive complexity increases in tasks (Baralt et al., 2014a; Ellis, 2003a).

A detailed discussion on the framework proposed by Robinson was also provided in Section 2.3.5.2 of Chapter 2 as well as in Section 4.2 of the previous chapter. Robinson’s original version of the Triadic Componential Framework (2001a) for grading and sequencing tasks comprises three factors, namely task complexity which refers to cognitive factors; task conditions which relates to interactional factors and lastly task difficulty which concerns learner factors. The three factors consisting of 36 variables in Robinson’s 2007 model raised the question of how all these variables “can be operationalised and differentiated”, as cited by Kuiken and Vedder (Baralt et al., 2014a: 26). Subsequently, Robinson (2010) then proposed his Simple-Stable-Automatised-Restructuring-Complex (SSARC) model of pedagogic task sequencing. This model explicitly states that for the purposes of task sequencing, the set of task characteristics found in the Triadic Componential Framework to task complexity are to be exclusively used in sequencing pedagogic tasks. Considerations regarding task sequencing for online language learning environments were also noted as it informs task design and sequencing (Baralt, 2014). As noted earlier, cognitively simple tasks are more suitable for online language learning as opportunities for learners to draw attention to form are increased (Baralt, 2014: 99). Robinson’s 2005 model was adopted for this study and was implemented for the cognitive complexity analyses done for the tasks used in this study. In addition, Robinson’s 2010 SSARC Model was used for the decomplexification or the descaling of complex target tasks found in Section 4 of the previous chapter. Although this study validates the position taken by Ellis and Skehan, this study has shown to support the position of Robinson’s claims on task complexity.

5.2.6 Step 6 – Implementation of task-based - CALL methodology

Step 6 of the design process concerns identifying classroom procedures and activities. In order to implement tasks in a meaningful manner, they should be based on established methodological principles that have been developed and researched. An in-depth discussion concerning the implementation of task-based methodology was given in Section 2.3.6 of Chapter 2. The hallmark of a task-based learning approach is emphasis on communication and interactions as well as accuracy and fluency. In order to achieve these four attributes through a task-based learning framework, three key phases were proposed. Invoking the three-stage methodology sequence proposed by Ellis (2003a),

Long (2015), Skehan (1996) and Willis (1996), the study presents tasks that are divided into three phases: pre-task activities, the actual task itself, followed by post-task activities. Also discussed in Section 2.3.6, were the different options for incorporating focus on form in the three methodological stages. In Section 3.6.7 of Chapter 3, a discussion on focus on form in task-based CALL methodology was given.

The pre-task introduces the task with relevant words and phrases that sets the scene for learners to initiate the task (Willis, 1996). Pre-task activities that are simple with a reduced cognitive load are presented to learners during this preparation phase (Long, 2015; Skehan, 1996). Referring to the target task 3 in Section 4.6 of Chapter 4, version 1 of the tasks in the pre-examination phase can be implemented as pre-task activities. The next phase, referred to as the during-task-stage of the task cycle, describes three components, namely, task, planning and report (Willis, 1996). As Skehan (1996) notes, if tasks are too complex then learners' mental processing capacity will be used for task content, thereby limiting processing for attention to language production. In order for learners to achieve fluency over accuracy and to encourage language development, Willis (1996) suggests an inclusion of another stage after the task itself. Encouraging tasks to be performed from simple to complex, Willis (1996) notes that simple tasks may consist of tasks requiring learners to make lists whereas complex ones may involve simulations. Version 2-3 of the tasks in the pre-examination phase can be implemented as during-task activities. The post-task stage is viewed as a period of evaluation and consolidation after task completion. It is at this stage where learners have the opportunity to repeat the task and are encouraged to reflect on the task performed. Creating opportunities within the design and process for interactional feedback for students to attend to linguistic form can be implemented at the post-task stage (Nassaji, 2014). Aiming for task-essentialness is also encouraged as contexts are created for learners to use the particular grammatical forms for successful completion of the task (Keck & Kim, 2014). Section 2.3.6 of Chapter 2 explored the different options for the inclusion of focus on form in the three methodological stages in the implementation of instructional tasks. Furthermore, in section 3.6.7 of Section 3, a discussion on focus on form in task-based CALL methodology was provided.

5.2.7 Step 7 – CALL teaching materials

To move from the implementation stage, the next stage of the design process concerns the CALL learning and teaching materials. This step culminates all information gathered from the previous steps. Having analysed the text that have been collected based on the language and technological needs of

the medical students and other constituents, looking for grammatical features and frequent words and phrases that form a pedagogic corpus leads to the preparation of teaching material that can be used in the CALL TBLT classroom. These CALL activities can include games and simulations that inevitably fosters learner autonomy.

5.2.8 Step 8 – task-based CALL assessment

In a task-based-CALL syllabus, the adoption of formative as well as summative assessments could be a way of evaluating (Singh & Gokool, 2018). This is a key step guiding learners to foster autonomous learning and for learners themselves to take more control over their learning. Instead of just listening to the teacher and passively taking notes, learners can play the most constructive role in these initiatives (Gai, 2014: 1293). The pedagogic tasks outlined below, can be implemented in CALL environment as part of assessments. These tasks can be implemented by using quiz tool featured on Moodle or any other software available at institutions for the purposes of formative and summative assessments. It was noted in Chapter 3 that the implementation of any task-based CALL assessments or task is based on various factors such as institutional needs, students' technological needs, and available resources at the institutions, access and support available to students. Since the task-based teaching present in this study is conducted at the University of KwaZulu-Natal, the use of Moodle is selected to explore the implementation of task-based CALL assessments.

5.2.9 Step 9 – Evaluation

As mentioned in Section 5.1 above, this study adopts a design-based approach, which entails an evaluation of the course, and an analysis of information gathered during the checking process. This checking process may lead to determining any loopholes, which may need to be filled. Since this process is a cyclical process, the outcomes of the analysis may lead to refining and redesigning aspects of the syllabus. Figure 5-1 below illustrates the various steps involved in the design process.



Figure 5-0-1. Design Process Model

5.3 A representation of pedagogic tasks for a task-based CALL design syllabus for isiZulu health sciences students

The aim of this section is to discuss examples of pedagogical tasks that can be implemented at a design level of a task-based CALL syllabus for doctor-patient communication. It was shown in Section 4.6 of the previous chapter how information gathered from the four-step analyses (Step 3) of the target tasks used in this study can be used to grade and sequence pedagogic tasks (Step 4) and to ensure integrative CALL through facilitating focus on form and input enhancement (Step 5). Not only are task complexity features considered when designing a syllabus, syntactic complexity as well requires due consideration. Information based on the language functions also has a significant influence in creating pedagogic tasks. There are many elements to consider within a task-based CALL syllabus design however; this study focuses particularly on grammar-focussed communicative tasks aimed at task-essentialness. Based on the methodological principles for language teaching (Doughty & Long, 2003; Long, 2015), Chapelle's (1998) principles for developing multimedia CALL as well as González-Lloret & Ortega's (2014) technology-mediated TBLT principles, the design of pedagogical tasks is presented in the following sections.

As noted earlier, most students at UKZN who are enrolled for the isiZulu module on doctor-patient communication are low-proficiency level students, thus cognitively simple tasks would work best for these students (Baralt et al., 2014b; Long, 2015). The tasks described below are referred to as “building block tasks” that are implemented at an early stage in the sequence of pedagogical tasks (Long, 2015). These tasks are easily recognizable as simple approximations of the target tasks. As noted earlier, the tasks are structured in terms of the three-stage (i.e. pre-task, task cycle and language focus) task-based learning framework proposed by Willis (1996). Follow-up activities are also included below as a way to practice various language forms. However, Keck and Kim (2014: 78) cite Larsen-Freeman (2003) who argues that these practice activities should be “meaningful, engaging and focused”.

5.3.1 *Pedagogic task sample [Giving instructions using the imperative mood]*

Drawing on the language functions found in the target tasks used in this study such as [Greeting], [Enquiring after well-being] and [Stating well-being], these are common opening phrases evident in all twelve target tasks. These clauses appear as formulaic expressions and are thus simple to acquire. Language functions of such kind are clustered as one item in the design of pedagogic tasks and would appear at the beginning of a course.

However, other examples of language functions such as [Giving instructions] would appear later in the course. A variety of language structures used to give instructions were identified in examples of the imperative mood, the subjunctive mood and the potential – **nga**. As demonstrated in the examples depicted below, they consist of sentences that are either simple mono-clausal or containing a main clause and one complement clause. The use of the **imperative mood** are found in examples such as:

Target task 3 (line 26): **Phakamisa** (“Move up.....”);

Target task 4 (line 48): **Khululeka mama** (“Relax mother “)

Examples containing the **subjunctive mood** can be found in:

Target task 2 (line 30): **Kuzomele uye esibhedlela** (“You have to go to the hospital”)

Target task 3 (line 30) **Kuzomele ayokwenza i-ultrasound** (“She must do an ultrasound”)

Two examples of the potential –**nga**- were evident in:

Target task 1 (line 7): **Ungabuza** (“You can ask”)

Target task 2 (line 3): **Ungahlala phansi** (“You can sit down”)

In order to practice these language functions, learners are required to practice the simple imperative mood in the following pedagogical task:

5.3.1.1 Pedagogical Task 1

The following pedagogical task involves students working in pairs or small groups. The image (see Figure 5-2) is an authentic example of instructions, extracted from a local newspaper is presented to students on Moodle. Instructions are provided to students and new vocabulary is discussed as well (**pre-task stage**). In this task, students are required to create a poster instructing patients of simple things to do to avoid the flu – (**during the task stage**). If students cannot propose a sufficient number of ideas, the teacher can intervene by writing a few sentences on the board – ‘**umama uthola umjovo**’ (mom gets an injection), ‘**isiguli sidla ukudla okunempilo** (the patient eats healthy food) and then students can convert these sentences to instructions. Upon completion of the poster, students can display their own poster presentation using PowerPoint. The task activity is complete when report-back and discussion takes place. Task-related follow-up activities can subsequently follow (**post-task stage**). For instance, students may also play the game “Doctor says...” in order to practise vocabulary and pronunciation. The game entails one student instructing another student or the class to follow instructions. By using, “Doctor says” the students, role-play as patients to perform the action. The

game entails using “Doctor says...” or “*UDokotela uthi*” before an instruction is given to students in order to perform the action. If the student, who is giving the instruction, does not use “Doctor says” before an instruction, then the actions are not to be performed. If students perform the actions without the cue words “Doctor says”, no points are awarded because the “Doctor did not say” to perform the action.

Ukuhlanzeka kudlala indima enkulu kakhulu ekulweni nesifo sofuba:

- Qikelela ukuthi ugeze izandla njalo emva kokusebenzisa indlu encane.
- Uma uzolungisa ukudla qala ngokugeza izandla ngamanzi anensipho.
- Vala umlomo uma ukhwehlela.
- Ungaphimiseli phansi isikhwehlela ngoba lokho kwandisa igciwane.
- Igumbi lakho lokulala kumele libe nomoya ohlanzekile, ngakhoke vula amawindi kushaye umoya.
- Kujwayele ukuthi ukhiphele ngaphandle omatilasi nezingubo zokulala kuhlathshwe ilanga.



Figure 5-0-2. Extract on the prevention of TB from Learn with Echo July 2006

The above task can be made more complex by manipulating the task features along resource-dispersing and resource-directing dimensions, as noted in Chapter 2 and 4 (Robinson, 2010 & 2011b; Robinson

& Gilabert, 2013). Integrating feedback into meaning-focused interaction can be achieved when learners' attention is drawn to linguistic form whilst performing the task (Nassaji, 2014). Furthermore, immediate interactional feedback can be provided in all three stages of the task implementation stage. In order to raise awareness of the language structure salient in the target task, follow-up activities that practice [Giving instructions] may also be included. Complex versions of grammar-focused communication activities that require students to practise other moods (i.e. subjunctive and potential –nga-) can gradually follow simple ones. Ensuring that follow-up activities (see Figure 5-3) are cognitively simple to perform can appear as a quiz or lesson on technological platforms like Moodle (Baralt, 2014). Drawing phrases from the target tasks, the matching type task below can be sequenced earlier in the course and students can work individually on their own time thereby encouraging learner autonomy. Being placed on Moodle as quiz activities and assessments provide students with immediate feedback so that students can attend to form and notice their errors. Students are also provided opportunities to re-attempt the quiz.

5.3.1.2 Pedagogical Task 2

Follow-up Activity: Giving instructions:

Match the verb with the correct noun in order to form an instruction

Izenzo	Amabizo
Yenza	amadolo
Yiya	umlenze
Hlala	mama
Khululeka	umuthi
Gobisa	esibhedlela
Phakamisa	i-ultra sound

Figure 5-0-3. Matching task type on giving instructions

5.3.2 *Pedagogic task sample [Giving instructions – exhortation mood]*

Additional examples containing complex structures of [Giving instructions] are evident in all twelve tasks. These sentences contain the main clause **ngicela** or **kumele** followed by the subjunctive mood. Examples of some of these clauses can be found in the following sentences.

Target task 1 (line 3): **Ngicela ungiphe imvume.....** (“Please give me the permission.....”)

Target task 1 (line 40): **Ngicela ungivumele.....** (“Please allow me”)

Target task 10 (line 28): **Kuzomele sithathe igazi.....** (“We have to take blood....”)

Target task 10 (line 29): **Kuzomele sihlinze**(“We should to operate”)

Target task 10 (line 35): **Kumele senze**(“We should do”)

The following pedagogical task illustrates how these complex subjunctive moods can be introduced and practised in a task-based CALL environment. This task can be manipulated to be simple or complex. For instance, a time limit may be imposed or no prior knowledge provided to complete this task.

5.3.2.1 *Pedagogic task 1*

In this pedagogical task, students work in pairs or small groups. The image (see Figure 5-4), an authentic sample of instructions, given to diabetes patients, is presented to students on Moodle. Instructions are provided to students and new vocabulary is discussed as well (**pre-task stage**). In this task, students are initially required to read the simple instructions within their groups and then change the instructions by using the language function [request]. Two of the six pictures do not have any instructions provided; students are required to provide their own instructions depicted on the pictures (**during the task stage**). Upon completion of the task activity, a discussion takes place on the linguistic form of the use of the subjunctive with instructions. Task-related follow-up activities can subsequently follow (**post-task stage**).

INDLELA YOKUZIPHATHA LAPHO UNESIFO SE-DIABETES

Uma unesifo se-diabetes kumele uqiniseke ukuthi igazi lakho kalinayo i-glucose eningi kumbe encane kakhulu. Ukwenza lokhu, kumele uvame ukuzelula umzimba futhi udle ukudla okunomsoco. Kungenzeka ukuthi udinge ukuba uphuze amaphilisi noma uthole umjovo we- insulin.



- ◆ Phuza amaphilisi noma usebenzise umjovo we-insulin uma udokotela wakho ekweluleka kanjalo.



- ◆ Ukuzelula umzimba kanye nokudla ukudla okunomsoco kuzokusiza ekwehliseni isisindo somzimba wakho



- ◆ Ukuhlala uhlola igazi kuzosiza ukuveza ukuthi inkinga yakho ye-diabetes inakekeleke ngendlela efanele yini

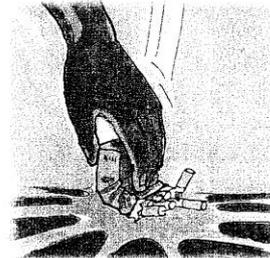


Figure 5-0-4. Pictures with instructions taken from Diabetes and you (Diabetes South Africa)

The pedagogical task below (see Figure 5-4) may be implemented as a follow-up activity after completion of the preceding task. Examples of more complex structures using the subjunctive mood evident in the target tasks in Chapter 4 are selected and illustrated below in this matching task type. Given the complexity in these clauses, they are sequenced after simpler versions have been completed. The task below can be designed as a quiz on Moodle, whereby immediate feedback is provided and noticing of linguistic forms can occur.

5.3.2.2 Pedagogic task 2

Exercise: Giving instructions:

Match the phrases in column A with the most appropriate phrases in column B:

1. Kubuhlungu esinyeni	1. Ngicela ungichazele
2. Kwathiwa ushukela wami ukhuphukile	2. Ngicela ulale ubheke phezulu
3. Sikhula lesi silonda	3. Ngicela ungiphe ikhadi lomntwana
4. Ngigula isitho sami sangasese	4. Kuzomele sithathe igazi khona sizoqinisekisa
5. Ngilethe umntwana namhlanje	5. Ake sibheke la emlenzeni
6. Izinhlungu ziqale izolo ebusuku	6. Ngicela uphakamise ishibha

Figure 5-0-5. Matching task type on giving instructions – complex clauses

5.3.3 Pedagogic task sample [Stating intention]

Another language function evident in many of the target tasks used in this study is [Stating intention]. Sentences are constructed using the future tense. The examples of such sentence constructions listed below describe how the language function of intention can be identified:

Target task 2 (line 29): **Ngizokunikeza amaphilisi ...** (“I will give you painkillers....”)

Target task 2 (line 30): **Manje bazongilalisa ...** (“Will they be admitting me....”)

Target task 3 (line 25): **Ngizobheka ukushisa ...** (“I will check the temperature....”)

The future tense is considered relatively simple in isiZulu as in the examples given above. However, when stating intent, different types of constructions may be used. These could include complement clauses that can be identified as instances of a complex future tense. This language function could be complex for learners. An example of a complex future sentence clause is identified as follows:

Target task 1 (line 40): **Sizobe sesibheka.....** (“We will look....”)

5.3.3.1 Pedagogic task 1

In order for learners to match the pictures and the sentences correctly, they should attend to grammatical form (Keck & Kim, 2014: 164). The picture-sequencing task described below (see

Figures 6-9) entails students working in pairs or in small groups. The images depict doctors conducting routine physical examination of patients and were photographed at the clinical skills lab at the Nelson R Mandela School of Medicine, UKZN. Students are provided with the pictures on Moodle and the sentences that describe the activity of the doctors. Instructions are provided to students and new vocabulary is discussed as well (**pre-task stage**). Each group has to sequence the sentences correctly with the corresponding picture (**during the task stage**). Upon completion of the sequencing activity, students are required to provide two more activities that the doctor will be doing. Using the chat or discussion board feature on Moodle, students can post their sentences and a discussion can occur (**post-task stage**).

Exercise: Stating intention

Match the sentences below according to the sequence of the pictures:

Udokotela uzohlola igazi - (The doctor will check the blood)

Udokotela uzohlola iBP – (The doctor will check the pressure)

Udokotela uzohlola amehlo ami – (The doctor will examine my eyes)

Udokotela uzohlola idolu lami – (The doctor will examine my knee)



Figure 5-0-6. Pressure check



Figure 5-0-7. Knee examination



Figure 5-0-8. Drawing blood



Figure 5-0-9. Figure 5-9 Eye examination

5.3.4 Pedagogic task sample [Stating opinion]

The task below consolidates several language functions [Stating intention], [Stating opinion], [Requesting information] and [Giving instruction] all of which are featured in many of the target tasks analysed in chapter 4. Also evident in this excerpt are task-essentialness grammatical forms such as the use of ‘nga-’ and ‘na-’ which are necessary for the completion of this task (Loschky & Bley-Vroman, 1993).

Some examples of sentences where the language function [Stating opinion] is evident in the target tasks are given below:

Target task 5 (sentence 5): **Bengicabanga ukuthi kuzodlula kodwa emva kwehora mangiya ekamelweni kubabuhlungu kakhulu.** . (“I was thinking it is going to pass but after an hour, and as I went to the bedroom, I felt more pain.”);

Target task 5 (sentence 40): **Bengicabanga ukuthi sengilaphekile.** (“I thought I was better”);

Target task 11 (sentence 10): **Ngacabanga nje ukuthi mhlambe yilezifo zikashukela esinazo kepha ngagcina sengize ngacabanga ukubona udokotela ngoba lento iyangihlupha.** (“I thought maybe I am diabetic so I thought let me see doctor because this pain is troubling me”).

Target task 11 (sentence 41): **Ngiyacabanga ukuthi uvuvukele kakhulu lapha nokuthi usezinhlungwini.** (“I think you are very swollen and you have pain”)

The above sentence constructions consist of a considerable number of complement clause types that are followed after **–cabanga ukuthi** (“think that”). The language function [Stating opinion] can be considered complex for learners to grasp. Hence, this language function [Stating opinion] would be sequenced towards the latter part in a syllabus design.

The listening task activity described below can be uploaded on Moodle as an audio clip. The dialogue can be audio recorded with home language isiZulu-speakers reading out the different roles. Software packages such as Audacity can be used to record the audio clip, which is then uploaded on Moodle for students to listen.

5.3.4.1 Pedagogic task 1

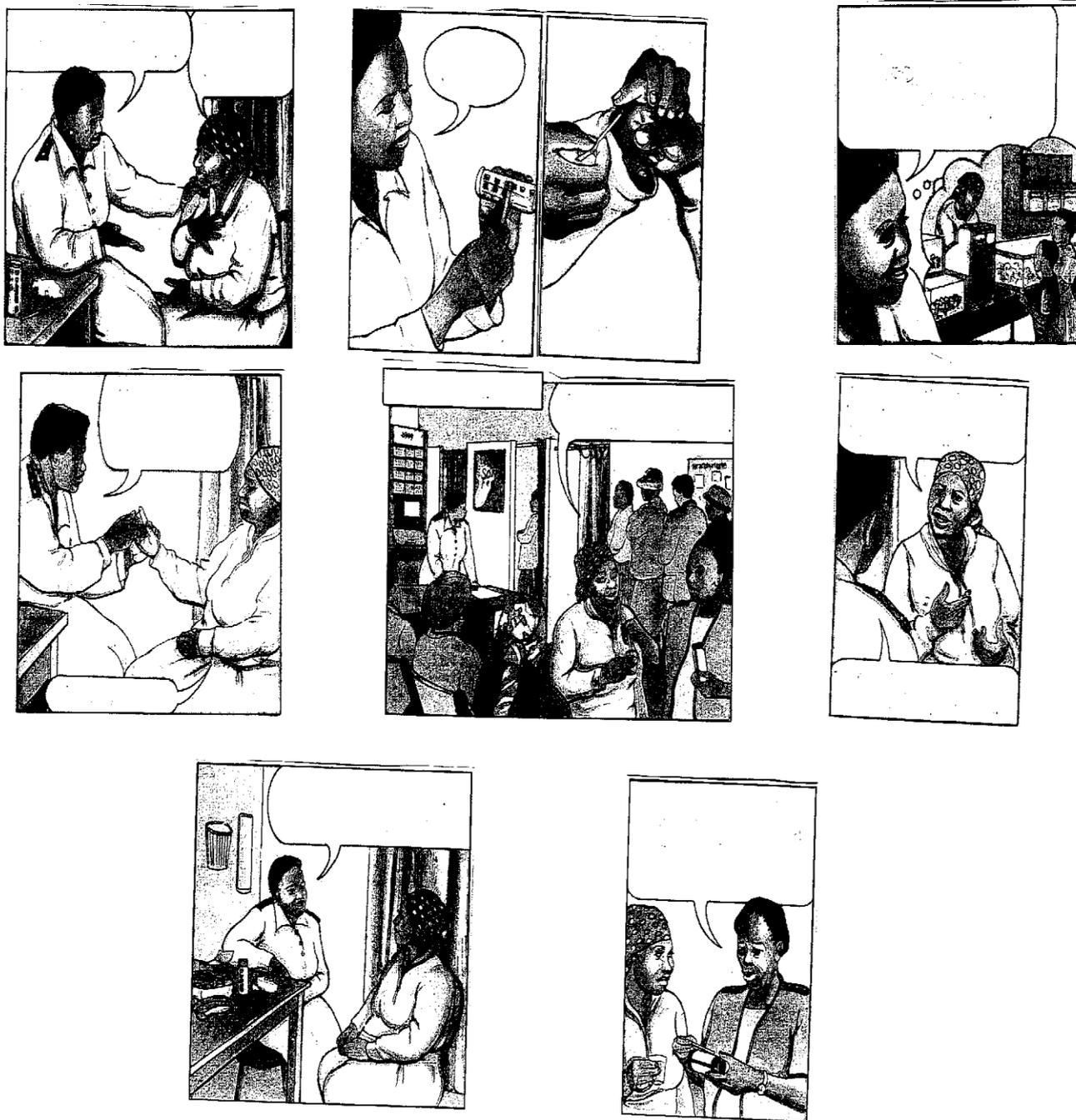


Figure 5-0-10. Pictures taken from Diabetes and you (Diabetes South Africa)

<p>Isiguli: (Emtholampilo). Udadewethu ucabanga ukuthi nginesifo se-diabetes.</p> <p>Unesi 1: Kungenzeka ukuthi udadewenu uqinisile. Kunoshukela emchameni wakho. Ngizokuthatha siyobona unesi.</p> <p>Unesi 2: Sisi, awungitshele ubuzizwa unjani?</p> <p>Isiguli: Ngihlala ngomele okuphuzwayo. Kanti ngiya njalo ethoyilethi – ngisho nasebusuku.</p> <p>Unesi 2: Le nkinga yakho ingankulu. Kuzomele ngihlole igazi lakho. Ukhona yini emndenini wakho onesifo se-diabetes?</p> <p>Isiguli: Yebo, umalume unaso.</p> <p>Unesi 2: Hmm.....awuthi sibone.....izinga loshukela egazini lakho liphezulu kakhulu. Unesifo se-diabetes.</p> <p>Isiguli: Cha bo! Ngabe sekuzomele ngiyeke umsebenzi?</p> <p>Unesi 2: Cha, akunjalo. Isifo se-diabetes sibi sona kodwa uma uzinakekela ngendlela efanele ungaqhubeka nje nokwenza zonke izinto obuzenza.</p> <p>Patient: (At the clinic). My sister thinks I have diabetes something called diabetes.</p> <p>Nurse 1: Your sister could be right. There is sugar in your urine. I will take you to see the nurse.</p> <p>Nurse 2: Sisi, tell me how have you been feeling?</p> <p>Patient: I am always thirsty. And I have to go the toilet all the time –even at night.</p> <p>Nurse 2: That could be serious. I will need to test your blood. Has anyone else in your family had diabetes?</p> <p>Patient: Yes, my uncle.</p> <p>Nurse 2: Hmm....let’s see.....your blood sugar is high. You have diabetes.</p> <p>Patient: Oh no! Do I have to stop work?</p> <p>Nurse 2: No. Diabetes is a serious condition, but if you manage it carefully you can still lead an active life.</p>
--

Figure 5-0-11. Excerpt taken from Diabetes and you (Diabetes South Africa)

For this task, students are provided with the pictures (Figure 5-10) and the audio clip of the dialogue (Figure 5-11). They are then provided with instructions of the type of knowledge that is required. New vocabulary is discussed subsequently. Students are required to work individually at first and then listen to the dialogue once (**pre-task stage**). Thereafter, students are required to match the sentences to the pictures that depict the meaning and then to sequence the pictures in the correct order to complete the dialogue. The drag-and-drop feature available on Moodle can achieve this. Students are then required to check with their partners if the picture sequence is correct. Students to listen to the dialogue again to check if they have sequenced the pictures correctly according to the dialogue (**during the task stage**). Following this, students are required to provide two more sentences using the stating an opinion language function, for examples, “Ngicabanga ukuthi ngizoba...” (I think that I may have...) or “Ngicabanga ukuthi azoba...” (I think she may have). With their partners, they can compare sentences and then present it to the class using the chat or discussion board feature on Moodle, where a discussion can occur (**post-task stage**).

5.3.5 *Pedagogic task sample [Requesting information]*

Given that the target tasks are considered information gap tasks, where information is exchanged between the patient and the doctor, the language function [Requesting information] is evident in large numbers in all twelve of the target tasks. In a typical medical history taking, a variety of interrogatives is used. The following examples describe various constructions that can be used to request information. Some of these sentence constructions are simple mono-clausal while others function as complement clauses of a verb in sentences used to request information. Examples of interrogatives evident in the target tasks are given as follows:

Target task 1 (line 25): **Kungabe kukhona kwezinye izindawo lapho uzwa khona ubuhlungu?** (“I hear you. Is there any other place where you feel pain?”)

Target task 1 (line 28): **Kungabe ubuzwa nini lobu buhlungu?** (“When do you feel that pain?”)

Target task 2 (line 17): **Kuqale nini?** (“When did it start?”)

Target task 3 (line 8): **Ungubani igama nesibongo sakho kanye neminyaka?** (“What is your name, surname and your age please?”)

Target task 4 (line 8): **Ubenani umntwana uze umlethe ngesonto eledlule?** (“What did the child have when brought last week”)?”

5.3.5.1 Pedagogic task 1

This comprehension-based task can be either audio recorded as a listening task or as a reading activity uploaded on Moodle. Various techniques can be used as input enhancement to elaborate the authentic material as highlighted on the text below (see Figure 5-12). Below is an illustration of how the task may be implemented as a CALL activity.

UKWELASHELWA ISIFO SE-TB

I-TB yisifo esiyingozi kakhulu. Siyelapheka, kuphela uma thola ukwelashwa ngokuphelele. **Ukwelashelwa** i-TB kuthatha isikhathi eside, kubalulekile ukudla imithi njalo ngendlela efanele.

Abantu abanengi badla imithi isikhathishana, bazizwe bengcono, bese beyeka ukudla imithi. I-TB ibuye ihlasele isinamandla kunakuqala. Yingakho manje sesinezinhlobo ze-TB ezingaselapheki. Ngakho kubalulekile (**it is important**) ukuthi bonke abantu abane-TB bathole ukwelashwa okufanele.

Emtholampilo **kuhlolwa** abantu abanengi, behlolelwa igciwane le-TB. Bafela amathe ebhodleleni. Amathe asetshenziselwa ukuhlola igciwane le-TB. *Imiphumela* itholakala ngemuva kwezinsuku ezimbili. Abantu abahloliwe kumele baphindlele emtholampilo ngemuva kwezinsuku ezimbili beyokuzwa ngemiphumela.

Inkinga enkulu ukuthi abantu abanengi abaphindeli emtholampilo ezinsukwini ezimbili. Imitholampilo ithola ukuthi iningi labantu banayo i-TB, kodwa ababuyi bezolanda imiphumela nokuthola ukwelashwa. Okusho ukuthi iningi labantu abane- TB abazi ukuthi banayo. Bangathelela imindeni yabo kanye nabanye abantu nge-TB. Bangabuye bagule kakhulu uma bengadli imithi efanele. Uma ngabe wena noma kukhona omaziyo uhlolelwe i-TB, kodwa wangalanda imiphumela, phindela emtholampilo uyothola imiphumela. Lokho kungonga impilo yakho, nabanye abantu abanengi.

Phendula imibuzo ngemisho egcwele ngesiZulu:

1. Benzani abantu uma besola ukuthi banesifo se-TB?
2. Chaza ukuthi ucabanga ziyini izimpawu ze-TB? Yisho izimpawu ezinhlanu.
3. Kungani kubalulekile ukuthi abantu abane-TB bathole ukwelashwa okufanele?
4. Bahlola yini igazi emtholampilo ukuthola imiphumela? Sekela impendulo yakho.
5. Uma wena ungodokotela uzobanika abantu izeluleko ziyini?

Figure 5-0-12. Adapted excerpt taken from Learn with Echo – April 2008

With this pedagogical task, students are presented with the task, which is accessible on Moodle. New vocabulary evident in the text by using input enhancement features (such as formatting the font by increasing the size, using different colours to draw attention to new form or vocabulary, underlining the difficult words and elaborate on new meaning within brackets), are introduced to the students. Clear instructions of the type of knowledge that is required is given to students (**pre-task stage**). Working in pairs or groups, students are allowed planning time to read and listen to the text and answer the questions based on the text (**during the task stage**). Upon completion, immediate interactional feedback is provided on Moodle and via teacher intervention or by other learners. Students are given the opportunity to review their answers on Moodle and then discuss issues they may have encountered. A discussion based on focus on form, particularly on the formation of questions takes place. In addition, ask students to write down two questions of their own based on the text, which is practised with their classmates (**post task stage**).

5.3.5.2 Pedagogic task 2

This task can be implemented as a follow-up activity allowing students to focus on linguistic form in a meaningful and communicative way. Referring to Figure 5-13 below, students can work as pairs or groups, practicing questions and answers based on the information on the medication box label. The purpose of this task is to draw learners' attention to question formation.



Figure 5-0-13. A genuine prescribed drug label

Imibuzo	Amabizo	Izenzo	Amagama amasha
nini	iphilisi	thatha	elilodwa
ngaki	igama	sebenza	kanye ngelanga
-phi	isibongo	nikeza	
-ni	inombolo yocingo		
ubani	ikheli		

Figure 5-0-14. Activity practicing new vocabulary

In this follow-up activity, students are provided with the information on the drug label. A discussion of the question words in Figure 5-14 takes place and clear instructions of the type of knowledge that is required is provided to students (**pre-task stage**). Each group is required to read the information on the label of the medication box and formulate as many questions as possible based on the information given on the label (**during the task stage**). Once completed, students are required to email or upload their questions on the chat or discussion board for other groups to answer the questions based on the information on the label. The two groups can compare their questions and thereafter a discussion can take place on the different options for formulating questions (**post task stage**).

5.3.6 Pedagogic task sample [Narrating]

A history taking conducted by a medical doctor consists mostly of questions that require a narration or events to be described, usually in the past. The target tasks used in Chapter 4 contain many examples of the language function [Narrating]. A variety of language structures used to narrate were identified in examples of the remote past tense, the past continuous or compound tense and the perfect tense. As demonstrated in the examples depicted below, they consist of sentences that are either simple mono-clausal or containing a main clause and one complement clause. Examples of sentence structures using the **remote past tense** were identified as follows:

Target task 12 (line 29): **Yakuqala nini?** (“When did it start”)?

Target task 12 (line 30): **Yaqala incane ilokhu ikhula** (“It started small and then got bigger

Target task 4 (line 14): **Wavele waphuma izilonda.....** (“She had sores all over her body...”)

Examples containing the **past continuous or compound tense** are evident in:

Target task 4 (line 12): **Ubenani umntwana**? (“What did the child have when brought last week”)?

Target task 10 (line 25): **Umama wami naye wayephethwe** (“My mother was diabetic.....”).

Sentence structures containing the **perfect tense** can be found in:

Target task 1 (line 37): **Ugcine uyenzile i-Xray?** (“Did you do an X-ray”)?

Target task 10 (line 5): **Hawu uvele waba mnyama nje?** (“Oh! It just turned black like that”)?

The following task focuses on the use remote past tense, which is meaningful and engages learners to practice this tense.

- Aaawe, we-ma! Eish!
- Baba noMama nizolulama ekhaya. Awunginika izinsukwana nje dokotela, incwadi yomsebenzi.
- Ekugcineni bahlolwa udokotela.
- Esibhedlela, ugoto nabalimeleyo bajoyina ulayini omude.
- Izinhlungu zikaMkhize noMaMsomi zadidizelisa isibhedlela.
- Phefumula! Asihlephukanga isiphongo pho, dokotela?
- Ucabangani? UMgqibelo namuhla!
- Udokotela wabathumela bobabili ekhaya.
- We mama! Soqeda kusasa la!

Figure 5-0-15. Text from Learn with Echo

5.3.6.1 Pedagogic task 1

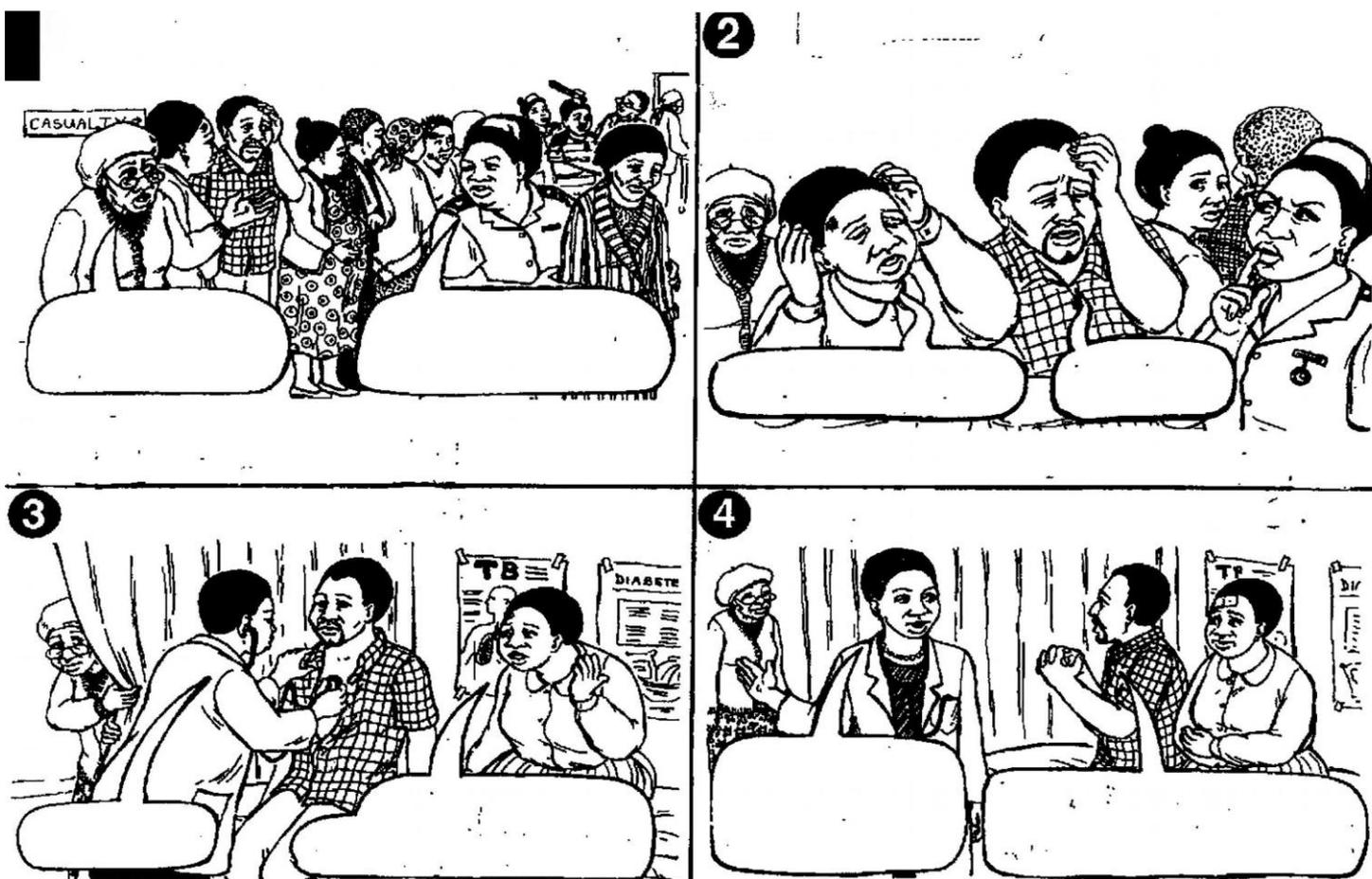


Figure 5-0-16. Image from Learn with Echo

For this picture-sequencing task, students are provided with the pictures and the text (see Figures 5-15 and 5-16). Students are required to work in pairs and read the sentences provided in Figure 16 and discuss new vocabulary (**pre-task stage**). With their partners, students are required to sequence the text according to the four scenes provided in Figure 16. Thereafter students are to compare with the group behind them if the scenes are sequenced correctly (**during the task stage**). Following the stage, students can create a fifth scene by proposing what other information can be exchanged between the patient and the doctor using the language function [Narrating]. Thereafter, students can present scene 5 to the class. A discussion on focus on form can then be followed (**post task stage**).

5.3.6.2 Pedagogic task 2

In this follow-up practice activity below (see Figure 5-17), students can access the task on Moodle. Keywords are provided to learners in order to prompt them to form sentences that describe the events in the pictures (**pre-task stage**). Learners are required to describe what happened at the clinic using the language function [Narrating]. This task allows students to focus on linguistic form in a meaningful and communicative way. Students may work as pairs or in groups, describing the events of the day of the doctor (**during the task phase**). The purpose of this task is to draw learners' attention to using the past tense, which takes place upon completion of the task (**post-task stage**).



udokotela/isiguli/isisu/phethwe/amaphilisi
amabili/gwinya



udokotela/isiguli/isifuba somoya/isifutho/sebenzisa



udokotela/isiguli/phethwe/khwehlela/thimula/umkhuhlane



udokotela/isiguli/isandla/limele/faka ibhandishi/

Figure 5-0-17. Picture narrating task

5.4 Summary

It is evident from the above representation of the pedagogical tasks for doctor-patient communication that the design process entails various important stages. The tasks discussed also illustrates how the combined information based on cognitive complexity, syntactic complexity as well as the language functions can be used to inform the design process. In addition, the tasks exemplify the amount of detail required to grade and sequence tasks appropriately, thereby making it possible for learners to learn language at an optimal level for successful second language acquisition. A task-based-CALL design cannot be undertaken unless all information gathered from the various stages of the design process is fully understood. Also demonstrated in this exemplification is how tasks can be successfully implemented within the three-stage phase, thus providing a space for learners to focus on form communicatively and interactively. It was shown how interactional feedback as well can be implemented within the three-phase implementation stage of instructional tasks. Based on the methodological principles mentioned above, the target tasks have been used as units of analysis and thereupon the pedagogical tasks have been designed. Elaborated input and providing rich input were made possible by input enhancements. Taking into account Chapelle's (2003) suggestions, various input enhancement techniques were used for the different tasks by underling or highlighting new vocabulary or providing a link to an online dictionary. In order for the pedagogic tasks to be effective, it is essential to allow students to focus on form in a communicative manner (Keck & Kim, 2014; Nassaji & Fotos, 2011). This was possible during the three-stage implementation process or through teacher or peer intervention. In addition to the methodological principles for language teaching (Long, 2015), the relevant aspects, according to González-Lloret and Ortega (2014) are the five factors of focus on meaning, goal-oriented tasks, learner-centred tasks, reflective learning enhanced and holistic and real-world language use and occurrences.

Taking the above factors into account, it is evident that González-Lloret & Ortega's framework coincides with several features of Long's methodological principles. Both researchers emphasise the importance of creating opportunities for students to interact in the second language, enabling production of the target language whereby negotiation of meaning takes place to accomplish the task. The emphasis on learners' needs were emphasised by both, thus making the tasks learner-centred, providing a holistic experience for learners, and exposing them to the happenings of their 'real world' working lives. The pedagogical tasks incorporates González-Lloret and Ortega's suggestion that they should not only be organized on the basis of specific task features and sequenced according to the principles of complexity but should also include pedagogic technology tasks in a similar arrangement and sequence. Furthermore, the design of the pedagogic tasks also included aspects that enhance learner autonomy.

5.5 Conclusion

This chapter described a pedagogical design methodology for an isiZulu syllabus for health sciences students. The main objective was to examine how carefully designed pedagogical tasks could develop students' language through providing a task and then using language to solve it within doctor-patient communication. Based on the needs of the health sciences students, their need to use the isiZulu language for effective communication within the healthcare context was the foundation for designing the pedagogical tasks in a teaching practice methodology. Invoking the various second language learning and CALL research theories, the teaching activities and methodology exemplified in this chapter demonstrate how the gap between theory and practice can be bridged.

The isiZulu pedagogical tasks are designed locally, relevant and useful to the communication needs of the students and considers the available resources within this particular institutional context. The pedagogic tasks are designed to be placed on the software Moodle that is accessible to both language teachers and students at UKZN. Using Moodle as the designated digital tool allowed for the integration of various language skills such as reading, listening and writing. Although the Moodle software does not support a recording feature, the speaking skill can be incorporated during classroom activities such as role-play and simulated doctor-patient consultations. The tasks combine the principles of both TBLT and technology and have been approximated closely to real-world language use such as giving instructions to a patient during a physical examination. It has been described that how all information obtained from the various types of analyses (Step 3) informs decisions concerning the grading and sequencing of tasks (Step 5). It was explained earlier that this proposed procedure is based on the

design-based research (DBR) approach, which entails a continuous cycle of design, implementation, evaluation, analysis and redesign. The cyclic process therefore will enhance the design of language learning material and ensure that the design be optimally appropriate to learners' specific language and digital needs.

CHAPTER 6

CONCLUSION

This study has argued for transformation in a health sciences curriculum – a change that integrates the teaching and learning of African languages. While efforts are made to integrate African languages at many South African universities, there remains noticeable gaps within the curriculum. Learning medical terminologies, medical jargon, phrases, random vocabulary and the offering of a general-purpose African language course are good starting points. However, these contributions alone will not suffice for successful and efficient doctor-patient clinical communication, as language barriers and miscommunication remain common hurdles in the everyday working lives of healthcare professionals. In addition, higher education institutions and governmental policies are promoting the teaching and learning of African languages, however, what is required is the actual implementation of these policies at ground level. In order to bridge the learning and teaching gap of isiZulu with Year 1 students entering into the clinical years of study (i.e. years 4-6), the University of KwaZulu-Natal (UKZN), South Africa has made preliminary efforts to vertically integrate isiZulu in Years 2 and 3 by including isiZulu history-taking stations with simulated patients during routine objective-structured clinical examinations (OSCEs). Moreover, the use of isiZulu communication videos was a further attempt to serve the gap temporarily (Diab et al., 2016; Matthews, 2013; Matthews & Gokool, 2018). It is for the above-mentioned reasons that this study was undertaken. The current situation within the health sciences curriculum concerning the promotion of African languages during doctor-patient clinical communication created a research space that urgently needed attention.

Therefore, this study has investigated key considerations related to the design of a task-based specific purposes syllabus that includes the use of technology for the teaching and learning of second language isiZulu. In order to promote the teaching and learning of African languages within the health sciences curriculum at UKZN, it was essential to formulate a syllabus design that is based on principled theories of second language acquisition (SLA), instructed second language acquisition (ISLA) and second language development (SLD). The terms SLA and SLD are used interchangeably in this study. By invoking the transdisciplinary framework proposed by the Douglas Fir Group (2016), this study incorporates many layers of existing knowledge by implementing an approach that synergises language learning with technology, good clinical communicative skills in the healthcare context and social responsibility and accountability.

This chapter presents nine sections that provides insights gained from this study with specific reference to syllabus design, technology-mediated TBLT in Chapters 2 and 3, main findings of the analysis discussed in Chapter 4 and design of pedagogical tasks in Chapter 5. It also aims to address the research questions that this study set out to answer. This chapter also describes areas for future research.

6.1 Key considerations in technology-mediated task-based syllabus design

An extensive literature review was provided in Chapters 2 and 3 that explored key concepts and issues related to task-based language learning and teaching (TBLT) and computer-assisted language learning (CALL) to second language (L2) learning. An investigation into the various research perspectives on syllabus design in TBLT was presented in Section 2.2. Prior to understanding the process involved in syllabus design, this section first highlighted the different definitions of curriculum and syllabus. A discussion on the various definitions by Richards (2013), Nunan (2004), Graves (2008) and (Robinson, 2013) were presented. It can be concluded that a syllabus is an outline that stipulates the approved learning content of a course of instruction, which is required to be taught and assessed. In the case of the current study, isiZulu as a second language for doctor-patient communication forms the basis of the syllabus' learning content.

It was also discussed that SLA or SLD as advocated by Larsen-Freeman (2015) is likely to occur through the adoption of task-based language teaching approach. A pedagogical approach that employs the use of communicative tasks for the teaching and learning of a L2 whereby learners are determined on producing meaningful communication and not simply acquiring language forms. Section 2.3 presented prominent theoretical developments in TBLT that have advocated for the use of task-based instruction. The central aspects of TBLT discussed the views of Nunan (2004), who argued that its focus is placed on experiential learning, allowing learners to be hands-on and engaged with communicative tasks that are relevant and stimulating, in order for meaningful interaction to occur in the target language (Nunan, 2004). Furthermore, the use of natural authentic texts as teaching material provided for meaningful communication with each other. Discussions also centred on the effects TBLT has on the internal learning processes such as incidental and implicit learning, the cognitive processes involved during language development and the methodological principles employed (Long, 2017).

A number of different variations to the term 'task' was presented in Section 2.3.1. Different definitions were provided by Edwards and Willis (2005), Long and Crookes (1993), Nunan (2004), Willis (1996), Prabhu (1987), Skehan (1998) and Ellis (2003a). Discussions centred on Ellis' (2003a) viewpoint of tasks, who argues that a task is a 'workplan'. It was argued that a task involves learners using language

meaningfully and practically to accomplish an outcome. Furthermore, in this section Ellis (2003a) provides a distinction between the different types of tasks that are prevalent in task-based instruction. Distinctions were made between open and closed tasks, focused and unfocused tasks, one-way and two-way tasks. Further distinctions of task types by Nunan (2004) and Long & Crookes (1993) included real-world target tasks and pedagogical tasks. The current study invokes the technology-mediated task-based language learning model proposed by González-Lloret and Ortega (2014). Therefore, it is important that both technology and language tasks should be seen as equally important.

6.2 Second language acquisition theories to TBLT and CALL

A number of second language learning theories have influenced both TBLT and CALL research, design, methodology and practice. Recent developments in instructed second language acquisition (ISLA), a sub-field of second language acquisition provides insights into the influences of instruction on second language learning processes. According to Benati & Nuzzo (2017), ISLA examines key issues such as input, output, negotiation of meaning and the effects it has on language teaching and classroom practices. Loewen and Sato (2018) argue that research in ISLA, particularly concerned with the interactionist approach is an essential factor in second language development. Chapters 2 and 3 have reviewed key theoretical foundations on the inclusion of communication tasks in task-based syllabus design. The overall main finding outlined in the literature review concerning the design of a CALL specific purpose course or teaching languages with technology is that focus should on key principles that emphasize development in a second language of such design and not on using technology in itself. It is argued by Doughty and Long (2003) that decisions relating to the inclusion of CALL into a second language syllabus should be based on concrete second language methodological principles. This influential framework for TBLT with technology proposed by Doughty and Long (2003) has been appropriately applied to studies, which show how tasks can support and enhance second language development (Gonzalez-Lloret, 2003; Whyte, 2013). Pedagogical tasks designed for the purpose of this current study has also applied a few principles outlined by Doughty and Long (2003).

Sections 3.4 and 3.5 highlights the main theories that have been incorporated into CALL design. These include the input and interactionist hypothesis, sociocultural theory, constructivist theory, situated learning and design-based research all of which have pedagogical implications. Regarding Input Hypothesis, computers are viewed as a valuable source input, however, Levy and Stockwell (2006) argue that input, interaction and learner output are equally vital for successful language development.

The Interactionist Theory has been the most influential theory of all second language perspectives regarding CALL research. According to Chapelle (2005b), studies based on the application of the Interactionist Approach has shown great benefits in three main interactional contexts. It allows learners to negotiate for meaning, provides enhanced input, which relates to cognitive complexity of learners and affords learners opportunities to focus on linguistic form. Because the interactionist theory does not facilitate face-to-face interaction within the CALL environment as it does in traditional classroom instruction, syllabus designers should consider alternate types of interaction within the materials design procedure. Loewen & Sato (2018) have also noted limitations regarding pragmatic developments with classroom interactions in computer-mediated environments.

The sociocultural theory based on Vygotsky's work can also be applied within CALL research. Based on a sociocultural perspective, CALL investigates the role of the computer tool in language learning. More specifically, it relates to how introducing new technological tools can transform the language learning pattern and learners' language usage. The social learning concept is also vital for research in computer-mediated communication. Warschauer (2005) argues that understanding how learners use language components of others in their own communication and how learners modify their writing whilst interacting with others using the computer is essential. Moreover, it is argued that a better understanding of CALL from a sociocultural perspective is essential when historical, social and cultural contexts are considered. Having the knowledge of the broader context in which learners work with, provides insights into how the use of new digital tools will influence the language teaching and learning process (Warschauer, 2005). Therefore, in the case of the current study, it was essential that the procedure used for materials design in a task-based CALL syllabus be informed by the broader context of the sociocultural perspective. The doctor-patient communication tasks can be included within the material design procedure to develop learners in a sociocultural manner.

In relation to the sociocultural theory, the situated theory as well provides insights into learning and the cognitive processes. According to Yang (2005), it is important to gain an understanding into the social world, the activity and the person involved in the learning situation. In the current study, the social world refers to the healthcare context, the person refers to the doctor-patient interactions and the activity refers to health sciences students who participate within a healthcare community of practise. These key elements can be incorporated into the task-based CALL design of the doctor-patient communication.

Attention was given to the design-based research (DBR), which seems to have a strong connection to task-based language learning research. This research paradigm was further developed into the design of pedagogical tasks found in Chapter 5 of this study. Moreover, the adoption of this paradigm into the study concerned its emphasis placed on practise. According to Yutdhana (2005), design-based research consists of two objectives, i.e. designing learning environments and developing theories of learning. These objectives can be attained by allowing cyclical process of design, implement, evaluate and redesign. An additional feature of this research paradigm is that it includes all role-players (i.e. the learners, teachers and designers) into the design and analysis procedure. This process is clearly connected with task-based language teaching, which follows a similar procedure in terms of the needs analysis. Yutdhana (2005) maintains that a similar procedure of design, implementation, analysis and redesign would be also appropriate with CALL research as new technological tools are introduced. As with TBLT where focus is placed on target or real-world tasks, DBR as well, places emphasis on real learning situations as opposed to conducting test hypotheses. Moreover, as task-based instruction focuses on the learning process, likewise with DBR, emphasis is on language practise within CALL environment as opposed to the digital end product or courseware.

In the case of the current study, a similar design-based procedure was proposed in Chapter 5. The proposed design process model describes that interaction is an essential component of the language learning process and therefore communicative tasks are vital. Focus on task typology within interactional complexity was included as the first segment of the analysis, i.e. Step 3. The information gathered in this step of the design process is also intended to be used together with the information obtained in the second segment of the analysis on cognitive complexity for grading and sequencing of pedagogical technology-mediated tasks. A combination of both sets of information obtained from the interactional and cognitive complexity analyses, information gathered from the linguistic complexity analysis was also considered as part of the analysis in Step 3. The reason for linguistic analysis is that focus on grammatical form is considered an essential part of the second language development. This part of the analysis included grammatical complexity measured in terms of speech units, based on sentential and clausal levels as well as syntactic structural complexity at a phrasal level, drawing specific attention to the noun phrase in L2 isiZulu to identify salient occurrences of nominal modifiers or phrasal complexity evident in the communication target tasks. The last part of the analysis included information obtained from the descaling of tasks for grading and sequencing of tasks. The information obtained on the grammatical form will be re-used to design the pedagogical technology-mediated tasks i.e. Step 4, which informs decisions regarding focus on form and input enhancement activities. Information retrieved from all four parts of the analysis of the communication tasks described in Step

3 will be used again for the intention of grading and sequencing the pedagogical tasks i.e. Step 5. Decisions on sequencing tasks from simple to complex will influence this segment of the design process. The implementation of the task-based CALL methodology is determined by a specific methodology option selected. Decisions on the selected methodology will also guide Step 6 of the design procedure. Classroom procedures and activities are also identified during this step of the design process. The type of CALL and other learning resource material designed in Step 7 is influenced by combining all information obtained in the previous steps and the broader teaching context. The creation of task-based CALL assessments during Step 8 will also be guided by the wider teaching and assessing strategy. The design of CALL learning materials in Step 7 and the decisions on how to implement these materials are to be integrated to form part of the overall classroom procedures and activities i.e. Step 6 as well as the creation of CALL assessment tasks in Step 8 form the steps in the design procedure. The design process considers all theoretical options at every stage of the procedure. The use of CALL tasks in second language teaching and learning is not viewed as a tool but forms part of the language learning development (González-Lloret & Ortega, 2014). The brief summary described above aims to address RQ6 on what are the implications for language instruction regarding the inclusion of a CALL syllabus, with specific reference to complexity and focus on form.

6.3 Communicative language teaching in task-based pedagogy

Section 2.3.2 discussed the main perspectives related of communicative language teaching (CLT) in task-based language learning and teaching. Nunan (2004) argues that language learning is viewed as a resource for creating meaning and not bound to rule-based grammar. This view correlates with the arguments posited by Larsen-Freeman (2015) on second language development that language is a dynamic and complex system. It is argued that second language learning involves a social process, whereby learners use the language resources available to them to communicate with others. Moreover, the internal process or the cognitive processes that learners are engaged are regarded as essential to the second language learning development. Language is a dynamic communication tool and goes beyond phonological, grammatical and lexical rules. In order to cater for different learners and their changing communicative needs, different learning programs can be developed. Hence, the advent of different pedagogical approaches such as notional-functional and oral-situational approaches under the overarching term of CLT. A further distinction was made between weak versions and strong versions of CLT. However, the main aim of CLT was that language should be used for real communicative purposes.

Both weak and strong versions of language teaching approaches also extended to task-based approach to second language teaching. It is argued that weak versions refer to ‘task-supported language teaching’ while the second, strong version refer to ‘task-based language teaching’, which is designed based on learners’ needs analysis. Different views regarding the two versions of task-based approaches from both Ellis (2003a) and Skehan (1996) were presented. In section 2.3.3, a detailed discussion for further motivation of the adoption of task-based language teaching was presented.

6.4 Rationale for task-based instruction

In Section 2.3.3, it is argued that the current trend in second language teaching was the task-based language learning and teaching. Different perspectives on the rationale for adopting a task-based pedagogy to second language learning and teaching were provided by Long and Crookes (1993), Prabhu (1987), Skehan (1996), Pica et al. (1993) and Ellis (2003a). However, the discussion centred on views proposed by Long (2015), who argues that task-based pedagogy measures up to a set of criteria that is aligned to SLA theories. He further argues that task-based learning is a learner-centred approach that involves learners in the process of their own second language development. Long (2015) maintains that a needs analysis based on the learners’ communicative needs are at the forefront of every task-based syllabus. He argues that a task-based oriented approach invokes accountability, which is an important criteria for higher education institutions to provide opportunities for students to learn a second language that is relevant to learners’ needs and to equip learners with communicative skills, which will be required for their professional work. Likewise, as with the current study, it is the responsibility of the institution to provide young medical students in training an opportunity to an isiZulu second language resource that it relevant and functional for doctor-patient communication.

6.5 Design features of a task-based CALL syllabus

A number of factors should be considered when deciding on a task-based syllabus design. Syllabus designers are consistently faced with challenges when deciding which specific type of task to be included such as what to teach, what is appropriate for the learners and in what order it should be taught. In Section 2.3.4, two distinct frameworks on task classification were provided by Ellis (2003a) and Pica et al. (1993). Particular attention was given to the psycholinguistic typology of tasks proposed by Pica et al. (1993). Section 2.3.4.4 presented a representation of a communication task typology, which are divided into four categories, i.e. task relationships, requirements, goals and outcomes. Informed by the interaction hypothesis, these above-mentioned categories describe the influences it

may have on opportunities for learners' comprehension of input, feedback on production and interlanguage modification when used to compare five different types of tasks. The tasks include jigsaw tasks, information-gap tasks, problem-solving tasks, decision-making tasks and opinion-exchange tasks.

Section 2.3.5 outlined the importance of reliable and accurate grading and sequencing of pedagogic tasks. This feature of task-based teaching is vital in order to build on learners' prior knowledge. It is argued that tasks are sequenced according their cognitive complexity. In other words, tasks are sequenced from simple to complex and at an appropriate stage of the learners' interlanguage development. Tasks that are usually taught first are relatively easier for learners at a beginner stage of the language learning process. Nunan (2004) argues that grading and sequencing of tasks is considered a complicated process in that it requires language items to be taught as holistic and should not be taught as piecemeal or isolated unit. Essentially, a task-based lesson consists of a sequence of tasks that are interrelated (Willis & Willis, 2008). Different options for the grading and sequencing of tasks were provided respectively by Skehan (1996), Robinson (2001a); (Robinson, 2001b & 2005 & 2007 & 2010) and Ellis (2003a). This study invokes Robinson's framework for grading and sequencing of isiZulu pedagogical tasks designed for health sciences students in particular, which claims that tasks should be sequenced in a way that increases both complexity and accuracy of language production. This outline on reliable and accurate grading and sequencing of pedagogic tasks highlighted above, aims to address RQ3 on what are the theoretical properties of reliable task selection, task sequencing and grading of tasks in syllabus design. Furthermore, the pedagogical tasks described in chapter 5 illustrate how the process of grading and sequencing can be successfully achieved in a task-based syllabus design.

Issues concerning focus on form in a task-based syllabus were discussed in Section 2.4.1. It was stated that focussing on linguistic form should be included in a task-based syllabus, however through a communicative and interactive approach. It is evident from the literature review in Chapter 2, that focus of form should be designed around real-world tasks and not linguistic structures. In section 2.4.1, Nassaji and Fotos (2011) defined focus on form as an instructional variant that integrates grammar and communication in second language development. It is argued that tasks could be designed to elicit the use of a specific linguistic structure. Loschky and Bley-Vroman (1993) argue that communicative tasks may elicit the use of grammar structures in three ways, i.e. task-essentialness, task naturalness or task utility. Different kinds of focus on form that could be integrated within a task-based approach to second language learning were discussed in Chapter 2. According to Ellis (2003a), focus on grammatical

structures should be made explicit to adult learners, in particular, during the duration of the language learning process. This view is considered especially in the teaching of isiZulu, where explicit attention to form is needed for learners at a beginner level, since the isiZulu language structures vary from that of the learners' first and second languages.

Several instructional options to facilitate grammar instruction and meaningful communication were provided by Nassaji and Fotos (2011). Based on theoretical and empirical studies, the options included processing instructions, textual enhancement, discourse-based grammar teaching, interactional feedback, grammar-focused tasks and collaborative output tasks. Thus, a syllabus designer or course designer should incorporate a repertoire of instructional strategies that address the specific needs and goals of learners and learning contexts. It was also evident in Chapter 3 the manner in which focus on form can be integrated in a task-based, CALL syllabus design. Several options of input enhancement techniques such as input salience, input elaboration and input modification were discussed as potential ways of including focus on form in a CALL environment. Syllabus designers and language teachers should incorporate these input enhancement techniques to increase the likelihood of learners noticing and gradually developing linguistic forms in isiZulu. The outline provided above aims to address RQ 5, which relates to how focus on form is incorporated in communicative tasks within a task-based CALL syllabus.

The role of the learner has been the dominant feature in task-based language teaching. In Section 2.5, it is argued by both Long (2016) and Van den Branden (2016) that the role of the teacher is equally important. According to Van den Branden (2016), the role of the teacher can be viewed in three different perspectives, i.e. the teacher as mediator, the teacher as a change agent and the teacher as a researcher and active agent. The role of the teacher is demanding, requiring the teacher to exhibit great skills and expertise in order to implement a task-based instruction successfully. The language teacher or syllabus designer has a selection of frameworks to implement a technology-mediated task-based methodology. Section 2.6. reviewed the frameworks proposed by Skehan (1996), Willis (1996) and Ellis (2003a). This study invokes the framework proposed by Willis (1996) for the implementation of pedagogical tasks, which is evident in Chapter 5. In addition, the methodological principles proposed by Doughty and Long (2003) for computer-mediated language teaching was also applied to the design of pedagogical tasks. As discussed throughout the study that tasks are viewed as the most suitable methodological tool for the use of second language classroom teaching, task assessments too, should correlate with task-based instruction. Section 2.7 explored how tasks can be included as part of the assessment tool in task-based syllabus design.

6.6 The teaching of isiZulu-specific purpose

Section 2.8 reviewed the issue of teaching for specific purposes. The discussion focused on the main elements proposed by Basturkmen (2006 & 2010) and Hyland (2009). It is argued that the design of a specific purposes syllabus entails a sophisticated process of conducting a need analysis. The complicated process not only considers the use of the language but also focuses on the language learning needs (Hyland, 2009). It is essential to extend the needs analysis to consider factors related to both learner and teaching contexts (Basturkmen, 2010). Moreover, the needs analysis should consider institutional expectations and teachers' beliefs and values of language teaching and learning (Hyland, 2009). In Chapter 3, González-Lloret (2014) argued that in technology-mediated task-based language learning and teaching as well, technological needs of learners are ever increasing. Learners are immersed in the digital world with technology penetrating every aspect of their lives, including the educational context. Therefore, it is important to consider all the different elements when designing a specific purpose syllabus. Because individuals or specific target populations have different perceptions and needs concerning tasks and contexts, different types of specific purposes syllabi can be considered (Hyland, 2009). Section 2.8.3 describes the types of specific purposes syllabi that relate to different perceptions and learners' needs. In addition to a needs analysis, it is argued that the design of a task-based specific course should also consider learners' individual differences (Long, 2015; Robinson, 2002). Age, motivation, relevance, anxiety and working memory are some essential factors that need consideration as they influence learners' abilities in second language learning and teaching. As with the present study, the needs analysis was a complicated process. This study considered the communication and technological needs of the health sciences students, consultations with clinicians as well as institutional policies relating to the language policy and the policy on integrating technology.

The teaching of specific purposes also relates to different types of language and language systems. Section 2.8.5 explored two kinds of language, i.e. common core plus and 'general purpose' language (Basturkmen, 2006). Language systems consists of grammatical structures, core vocabulary and patterns in text organizations. These examples of language systems were discussed in Section 2.8.5.1. Language use is also an essential characteristic of teaching for specific purpose. The focus of language use is based on communicative purpose. In order for learners to achieve the communicative purposes, Basturkmen (2006) proposes that speech acts, genres and social interaction that can be used to analyse language in professional or academic environments. Section 2.8.6 explores the use of speech acts and genres used in teaching specific purpose syllabus. The doctor-patient dialogues in Chapter 4 of this study was analysed in terms of the speech acts spoken by the speakers. The language functions were

identified to determine the communicative purposes of the participants in the communication tasks. Establishing a good rapport between the doctor and the isiZulu-speaking patient was a key factor for health sciences student whose need for a specific purpose course was the rationale for this study.

Several theories related to language learning were proposed in this study, of which Basturkmen proposes two. Section 2.8.7 discussed the theories of acculturation and input and interaction that relates to ideal conditions for language learning in specific purposes. Acculturation refers to a social condition that facilitate learners becoming socially and psychologically ready upon entering in their target discourse community. This condition of learning did not apply to this study because the target discourse community that health science students are preparing for are familiar to them. Students are familiar with the target community during hospital rotations and clerking patients training take place in the clinical years of their study.

The second condition for learning proposed by Basturkmen (2006) related to input and interaction. Second language theories concerning input and interaction have been discussed in both Chapters 2 and 3. It is generally accepted that with communicative language teaching learners should be exposed to language use to allow for opportunities for interaction in the target language. It is argued that a task-based approach to second language provides learners adequate opportunities for interaction. Chapter 5 illustrates examples of how interaction can be achieved within the design of pedagogical tasks implemented in a task-based approach to teaching a specific purpose syllabus.

Specific purpose course design involves the design of authentic material that are locally produced by the syllabus designer or teacher. In Section 2.8.8, Basturkmen (2006) argues that the extent to how narrow or wide-angled a course ought to be should be considered. Chanier (1996) also proposes a checklist of essential elements to be considered when designing a specific purpose course. He refers to time allocation, learning styles and cost factors to be considered. Moreover, the use of tasks that are based on learners' needs and that include a socio-cultural element into a specific purpose CALL design can also be considered beneficial. Research reviewed also shows that a multimodal and integrated approach to the design of specific courses should be considered (Franceschi, 2017). In addition, task-based specific purpose course that include technology should also be designed in a manner that promotes learner autonomy. Section 3.7 outlines the development of learner autonomy. The outline provided above aims to address RQ 7 relating to how design properties of CALL learning tasks can facilitate input-based instruction, language awareness and learner autonomy.

The discussion on the views of Basturkmen (2006) relating to the teaching objectives that occur in specific courses was provided in Section 2.8.9. Basturkmen (2006) proposes five objectives that play an important role in language teaching for specific purpose. The five teaching objectives include subject-specific language use, target-performance competencies, underlying knowledge, strategic competence and critical awareness. This summary on an isiZulu-specific purposes syllabus design described above, aims to address RQ4 on what are the principles that guide specific purposes syllabus design. In addition, it also refers to focus on form inclusion through CALL.

6.7 Cognitive complexity and linguistic complexity in task-based instruction

The purpose of Chapter 4 was to analyse cognitive complexity and linguistic complexity of isiZulu pedagogical tasks using CALL for health sciences students. A comprehensive analysis was presented in Section 4.2 concerning Robinson's Cognition Hypothesis. It is argued that the Cognition Hypothesis posits that cognitive complexity of tasks should serve as the theoretical basis for instructional task design. Moreover, task-based theory posits that increases in cognitive complexity is the determining factor when sequencing pedagogic tasks for learning purposes. Robinson addressed the issue of cognitive abilities of students and their individual differences relating to the Cognition Hypothesis. It is understood that students differ in their understanding of a given task. Some students may fall behind in their learning because of a lower ability of learning whereas others may advance at a higher rate in their learning because of their higher ability of learning. The aim is to develop pedagogic tasks and then sequence them according to learners' cognitive abilities. In other words, sequence tasks from simple to complex in order to meet the demands that occur in real world target tasks. In Section 4.2.1, Robinson (2005) distinguishes between task performance and task-based language development but argues that these processes are connected in terms of how it can be stimulated by the use of task demands. Further discussions related to the development of a practical task-sequencing criterion, which concerns increasing the complexity of tasks are also provided. Section 4.2.2 provided detailed information on certain dimensions that play a key role in increasing or decreasing cognitive complexity on communicative tasks. Discussions concerning task conditions and task difficulty and the influence it has on language production and language teaching were also explored in Section 4.2.3. Section 4.2.4 paid particular attention to the discussion on Robinson's simple-stable-automatization-restructuring-complexity (SSARC) Model (2010).

Section 4.3 presented a comprehensive discussion on the analysis of spoken language proposed by Foster et al. (2000) in. It is important to analyse the language use found in the communication tasks,

as both cognitive complexity and syntactic complexity are interrelated. It was further discussed that tasks with higher cognitive complexity would generally yield higher syntactic complexity. Focus was also given to the different language units proposed by Foster et al. (2000). Both these language units and speech acts were used for the purposes of the syntactic analysis of the communication tasks. The last component of the complexity analysis reviewed the taxonomy model of complexity construct proposed by Bulté and Housen (2012) and then later adapted by Bartning et al. (2015). The aim of the analysis was to identify syntactic complexity on three levels, i.e. sentential, clausal and phrasal levels of the communication tasks.

The main aim of Chapter 4 was the complexity analysis of the isiZulu doctor-patient communication tasks. The communication tasks were simulated doctor-patient interviews that replicate real-life common illnesses experienced by patients. Chapter 4 consisted of 11 semi-authentic target tasks and one authentic task, based on the Calgary Cambridge guide to a medical interview (Silverman et al., 2005), which describes how discourse structure could be used to analyse the isiZulu communicative tasks in order to determine the communicative purpose. The language functions in conducting a medical interview were also used to ascertain the communicative purpose. In addition, the three types of elements involved in the grammatical structure of a task, i.e. task-naturalness, task-utility and task-essentialness were used to classify the language functions accordingly. The language functions evident in the communicative target tasks used in this study involved mostly task-essentialness.

The isiZulu target tasks investigated in Chapter 4 were analysed in three different ways. Each dialogue was introduced by a task descriptor outlining the various elements required for task completion. The target tasks were then analysed in terms of the task complexity analyses, namely, interactional complexity (Pica et al., 1993), cognitive complexity (Robinson, 2005 & 2007 & 2010) and syntactic complexity (Bartning et al., 2015; Bulté & Housen, 2012; Foster et al., 2000). Concerning the interactional complexity analysis, it was found that the type of task were mostly information gap tasks, according to Pica et al.'s (1993) task typology framework. Furthermore, most of the target tasks contained questions and answers required when gathering information during a medical interview, which are typical examples of information gap tasks (Pica et al., 1993). Therefore, greater interaction will be required in order to complete these tasks. Examples of problem-solving and decision-making tasks were also evident in Chapter 4. With these task types, opportunities for interaction are minimum and hence there is low interactivity evident. The purpose of this analysis was to illustrate how different task types contribute to language development.

The next set of analyses involved the analysis of the communication target tasks according to cognitive complexity. The tasks were segmented into three broad phases, i.e. the introductory or the initiating the session stage, the diagnostic stage of questioning, instructing and explaining and the directive or closing the session stage. Language phrases were analysed in terms of cognitive complexity based on Robinson's triadic componential framework which is based on his Cognition Hypothesis (2005 & 2007) and the stabilize-simplify-automatize-restructure-complexify (SSARC) Model (2010). In section 4.5, the findings of the cognitive complexity analysis indicate that most of the target task segments display features of Quadrant 4 of the Triadic Componential Framework and are therefore related to high developmental and high performative complexity. Because of the complexity of the target tasks, it was necessary to descale the target tasks in order to make them more manageable for learners to complete and taking into consideration the proficiency levels of the students. The last part of the cognitive complexity analyses demonstrated the descaling or decomplexification of each of the twelve target tasks, i.e. the less complex or simpler version in terms of the SSARC Model (see section 4.5.1). The content of the communicative tasks can be either decreased or increased by the scaling or descaling of task complexity. The aim of the analysis was to enhance learners' abilities to use the target language to attain resource-directing demands of tasks. These demands include the features of here-and-now, few elements and reasoning given in the tasks. This summary of cognitive complexity analysis described above aims to address RQ1 on how cognitive complexity can be analysed in communicative tasks.

The dialogues were also analysed according to syntactic complexity. The analysis of speech, according to Foster et al.'s (2000) assessment of speech units and the taxonomy model of complexity construct proposed by Bulté and Housen (2012) and then later adapted by Bartning et al. (2015) was used to identify syntactic complexity on three levels, i.e. sentential, clausal and phrasal levels of the communication tasks. The analysis demonstrated examples of an increased level of syntactic complexity in most of the segments of the target tasks used in this study. It was found that the communicative tasks exemplified a reduced level syntactic complexity in the introductory phases that included simple structures; most of them being mono-clausal sentences and sentences learnt as holistic chunks. The diagnostic and directive phases consisted mostly complex sentences, exhibiting greater levels of syntactic complexity. The intention of the analysis at phrasal level was to identify salient occurrences of nominal modifiers or phrasal complexity evident in the communication target tasks. It can be concluded that the communicative tasks presented in this study illustrated numerous salient occurrences of language functions. These language functions can be classified as task-utility, task-essentialness or task-naturalness. Focus on these salient language functions will enable learners to

draw attention to different types of language forms. Furthermore, the aim of focussing on these salient language functions was to enable learners to use these grammar forms strategically. This summary of linguistic complexity analysis described above aims to address RQ1 on how linguistic complexity can be analysed in communicative tasks. It also aims to address RQ2 on whether task complexity facilitates L2 development in isiZulu.

6.8 Future research

Teaching students at higher education, who are usually referred to as the iGeneration has changed the educational landscape of how second language isiZulu are taught and learnt. It is challenging for both learners and teachers to keep abreast with the rapid advancements in technology. Adequate teacher and learner training should be an ongoing process. This study can be further extended by improving the way in which CALL activities are implemented within the isiZulu module, based on the learners' need obtained in this study. By using rich authentic input such as simulations and game-based environments can provide innovative approaches to future technology-mediated tasks and task-based assessments to improve the isiZulu teaching and learning process.

The teaching and learning of African languages within a health sciences curriculum needs more attention. Future research is needed in the design of clinical-based and competency-based assessments in isiZulu to drive the learning process. Breaking bad news to patients or obtaining consent for medical procedures within specific disciplines in the health sciences curriculum is another area for future research. The isiZulu cultural element is also important to consider for future research.

6.9 Final remarks on the design and implementation of a second language task-based isiZulu CALL syllabus for health sciences students

The design of a technology-mediated task-based specific purpose syllabus is a complicated and dynamic process. The process involves many elements needed to be researched. At the forefront of the syllabus design is the needs analysis. From the perspective of a second language teacher, having a theoretical understanding of task-based language learning and teaching, specific purpose and CALL is vital. Second language teachers have different options of theoretical perspectives when proposing a task-based specific purpose CALL procedure. By using the design-based procedure as in the case of this study, language teachers or course designers have the opportunity to evaluate and monitor the effectiveness of the implementation of the research paradigm they have selected. This checking process is a cyclical process of design, implementation, assess, refine and redesign.

This study has focused specifically on the design of a task-based specific purpose CALL course for health sciences students learning isiZulu. Emphasis was also placed on the inclusion of linguistic form as a useful strategy and the integration of technology in a task-based instruction. Being a multilingual country, there remains a need for specific purpose courses in different professional sectors and in different South African languages. Transformation within the South African higher education in respect of teaching and learning of African languages as a second language is moving but at a sluggish rate. The findings of this study can provide a scientific base for future language researchers embarking on course designs in other diverse contexts.

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APPENDIX 1: LANGUAGE NEEDS QUESTIONNAIRE

Needs Analysis Questionnaire for isiZulu task-based CALL syllabus for health sciences students

Dear Students

ISIZULU LANGUAGE NEEDS OF HEALTH SCIENCES STUDENTS

The **aim of this questionnaire** is to design an isiZulu language specific syllabus for Health Sciences students at a clinical practise site. In order to design this type of syllabus, we would like to conduct a language needs analysis to establish what language skills you have acquired during your first year of studying isiZulu and at the clinical sites and how we can further enhance this knowledge. Considering that you have completed the year-long isiZulu module in your first year, it is evident from the analysis of module evaluations, that there may be a lack of necessary skills to analyse and manage complex communication. It is also evident from these evaluations that the need for technological resources are essential. Your input in this regard is invaluable, as it will assist the language syllabus designer with your specific needs to be incorporated into the design of the syllabus. The design of a **specific purpose isiZulu syllabus** will enable the School of Clinical Medicine, discipline of Family Medicine to equip its students with the language and linguistic skills needed when communicating with an isiZulu patient as a professional clinician.

I would like to invite you to participate in the language needs analysis. I have listed a few questions for you to answer.

Please hand the completed form back to the researcher, Ms Gokool.

Thank you for your time and your contribution.

Roshni Gokool

PhD Researcher

Questionnaire:

1. Describe in your own words, your current knowledge of the language?
2. How do you see yourself using isiZulu in your future/ be it for professional/personal use?
3. Considering that you have completed the year-long isiZulu module in your first year, are you confident enough to interview patients in isiZulu?
4. What are some of the common health problems among patients that you have encountered during your training in clinical communication skills? Describe some scenarios.
5. How do the patients respond when you speak to them in isiZulu? Provide examples.
6. Which parts of the language do you find most difficult?
7. What else would you like to see included that would be relevant to your needs?
8. In your training, do you consult a specific group of patients or across all age group?
9. Which skills (language/digital/communicative) do you use/need/lack most?
10. How far do you want or need to go with your isiZulu?