

**STUDENTS' AND CLINICAL TEACHERS' VIEWS ON
EFFECTIVE CLINICAL EDUCATION IN
PHYSIOTHERAPY AT STELLENBOSCH UNIVERSITY**

**DAWN V ERNSTZEN
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at

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Supervisor: Professor EM Bitzer

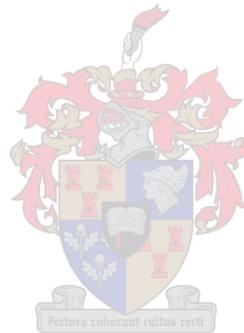
April 2006

DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

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SUMMARY

Clinical education in health sciences is an important and distinct part of health care education. In clinical education situations, students learn to integrate the knowledge, skills, attitudes and values of the profession. The attainment of clinical competence is one of the main outcomes of the Clinical Physiotherapy module for physiotherapy students at Stellenbosch University (SU). In its Strategy for Teaching and Learning (2001:3), SU embraces a student-centered approach to teaching. In a student-centered approach towards teaching, the focus is on the quality and quantity of student learning. In the current changing context of higher education, all spheres of education need to be assessed to determine the meaning of student-centeredness and to establish whether it is achieved. The above-mentioned approach may lead to quality management in teaching and learning.

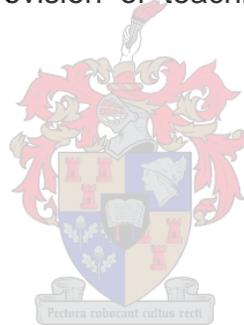
The primary aim of the study was to investigate what physiotherapy students and clinical teachers at SU view as effective clinical education. Teaching-learning activities and the role they play in learning production were investigated to determine what constitutes quality clinical education. Clinical teachers' roles and attributes were also investigated to determine how it might influence learning.

A descriptive case study was carried out. All enrolled physiotherapy students who had had clinical experience in 2005, and all clinical teachers directly involved in the clinical education of these students, were invited to participate in the study. Quantitative data were generated using a questionnaire. Semi-structured individual interviews with a random sample of the population were used to generate qualitative data.

A response rate of 80% was achieved with the questionnaires. Participants rated demonstrations of patient management, discussions on patient management and feedback as the three most effective teaching-learning activities. Simulated clinical competency tests were also identified as a valuable teaching-learning activity. The reasons for participants' views relate to the facilitation of problem solving, clinical reasoning, proficiency of techniques and communication skills to achieve clinical competence. Participants had mixed feelings on the efficacy of reflection, peer assessment and self-assessment as learning activities. The five most important roles of the clinical teacher were identified as facilitator of learning, mentor,

assessor/evaluator, technique demonstrator and role model. The clinical teacher seems to play an important role in establishing an optimal learning environment. The most important clinical teacher attributes were identified as approachability, good communication, recognising students' abilities, and respecting and supporting the student.

Findings from the study suggest that in the clinical education programme, demonstrations of patient management in an individual or group situation should form an integral part of the clinical education programme. It is recommended that demonstrations be followed by discussion and appropriate feedback. Formative assessment appears to be a powerful learning tool. Formative assessment and the use of demonstrations strengthen constructive alignment and outcomes-based education in the clinical education curriculum. It has been confirmed that the clinical teacher plays a central role in the clinical learning experience of the student. Clinical teachers should thus be aware of the powerful role they play in learning. This role goes beyond the mere provision of teaching-learning activities, but extends to personal and professional factors.



OPSOMMING

Kliniese onderrig is 'n belangrike en kenmerkende deel van die onderrigprogram van gesondheidsorgberoep. Tydens kliniese onderrig leer studente om kennis, vaardighede, instellings en waardes van die professie te integreer. Die bereiking van kliniese bekwaamheid is een van die hoof-uitkomst van die Kliniese Fisioterapie-module in die opleiding van fisioterapiestudente aan Stellenbosch Universiteit (SU). In SU se Strategie vir Onderrig en Leer (2001:3) word 'n student-gesentreerde benadering tot onderrig beklemtoon. 'n Student-gesentreerde benadering tot onderrig beteken 'n fokus op die kwaliteit en kwantiteit van leer by studente. In die huidige veranderende konteks van hoër onderwys behoort alle aspekte van onderrig ondersoek te word om vas te stel wat student-gesentreerdheid beteken en of dit bereik word. Bogenoemde benadering mag tot gehalteversekering in onderrig en leer lei.

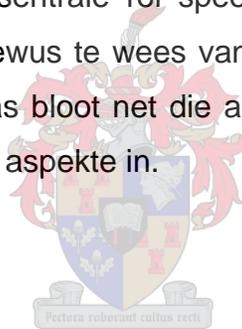
Die primêre doel van die studie was om ondersoek in te stel na wat fisioterapiestudente en hul kliniese dosente as effektiewe kliniese onderrig beskou. Onderrig-leeraktiwiteite en die rol daarvan in die generering van leer, is ondersoek om te bepaal wat gehalte in kliniese onderrig behels. Die rolle en eienskappe van die kliniese dosent is ook ondersoek ten einde te bepaal hoe dit leer beïnvloed.

'n Beskrywende gevallestudie is uitgevoer. Alle ingeskrewe fisioterapiestudente wat in 2005 kliniese ondervinding gehad het, asook alle kliniese dosente wat direk betrokke was by die onderrig van bovermelde studente, is uitgenooi om aan die studie deel te neem. Kwantitatiewe data is deur middel van 'n vraelys gegenereer. Semi-gestruktureerde, individuele onderhoude is met 'n ewekansige steekproef van die ondersoekgroep gevoer om kwalitatiewe data te genereer.

'n Responskoers van 80% is met die vraelyste verkry. Deelnemers het demonstrasies van pasiënthantering, asook besprekings en terugvoer as die drie mees effektiewe onderrig-leer aktiwiteite uitgewys. Gesimuleerde kliniese bekwaamheidstoetse is ook as 'n waardevolle onderrig-leeraktiwiteite geïdentifiseer. Die redes vir bogenoemde sieninge hou verband met die fasilitering van kliniese redenering, probleemoplossing, vaardigheid in tegnieke en kommunikasievaardighede om kliniese bekwaamheid te bereik. Deelnemers het gemengde

gevoelens uitgespreek oor refleksie, portuur- en selfevaluering. Die vyf belangrikste rolle van die kliniese dosent is geïdentifiseer as fasiliteerder van leer, mentor, assessor/evalueerder, demonstreerder van tegniek, en rolmodel. Die kliniese dosent speel 'n belangrike rol in die skepping van 'n optimale leeromgewing. Die belangrikste eienskappe van 'n kliniese dosent is as toeganklikheid, goeie kommunikasie, erkenning van studente se vermoëns, respek en ondersteuning van studente geïdentifiseer.

Die bevindinge dui aan dat demonstrasies van pasiënthantering in 'n individuele of groepsituasie 'n integrale deel van die kliniese onderrigprogram behoort uit te maak. Dit word aanbeveel dat demonstrasies gevolg behoort te word deur bespreking van die demonstrasie en terugvoer. Formatiewe assessering is eweneens uitgewys as 'n kragtige leerfasiliteringstrategie. Formatiewe assessering en demonstrasies kan 'n konstruktiewe belyning en uitkomsgebaseerde onderwys in die kurrikulum versterk. Die ondersoek het bevestig dat die kliniese dosent 'n sentrale rol speel in die kliniese leerervaring van die student. Kliniese dosente behoort bewus te wees van die sterk rol wat hulle in studente se leer speel. Hierdie rol strek verder as bloot net die aanbied van onderrig-leeraktiwiteite, dit sluit ook persoonlike en professionele aspekte in.



ACKNOWLEDGEMENTS

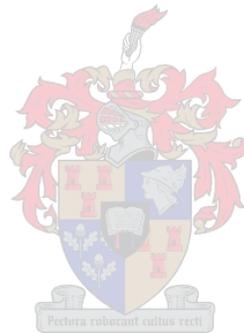
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CONTENTS

Summary.....	(i)
Opsomming	(iii)
Acknowledgements	(v)
List of tables	(x)
List of abbreviations	(xi)

CHAPTER ONE

ORIENTATION TO THE STUDY	1
1.1 INTRODUCTION	1
1.2 BACKGROUND TO THE STUDY	2
1.3 MOTIVATION FOR THE STUDY	5
1.4 RESEARCH QUESTION AND AIMS	8
1.4.1 Research question.....	8
1.4.2 Primary aim.....	8
1.4.3 Secondary aims	8
1.5 RESEARCH DESIGN AND METHODOLOGY	8
1.5.1 Research design	8
1.5.2 Research approach	9
1.5.3 Study population	9
1.5.4 Instrumentation	10
1.5.5 The research procedure	11
1.5.6 Data management and statistical analysis	12
1.5.7 Ethical considerations	12
1.6 OUTLINE OF THE THESIS	13

CHAPTER TWO

LITERATURE STUDY	14
2.1 THE CONTEXT OF HIGHER EDUCATION	14
2.1.1 A learner-centered paradigm	14
2.1.2 Outcomes based education	17
2.1.3 Clinical competence	19
2.2 PERSPECTIVES ON TEACHING AND LEARNING	20
2.1.1 Teaching	20

2.2.2 Learning	21
2.2.2.1 Approaches to learning	22
2.2.2.2 Learning theories	23
2.3 THE CONTEXT OF CLINICAL EDUCATION IN PHYSIOTHERAPY	30
2.4 FACTORS INFLUENCING THE DELIVERY OF EFFECTIVE CLINICAL EDUCATION	32
2.4.1 The learning environment	32
2.4.2 Clinical teacher roles and attributes	33
2.4.3 Teaching-learning activities used by clinical teachers	37
2.4.4 Student assessment	41
2.4.5 The model of clinical education used.....	43
2.4.6 Organisation, facilities at the health care setting and evaluation of the health care setting	43
2.5 SUMMARY OF THE CHAPTER	44
 CHAPTER THREE	
MATERIALS AND METHODS	46
3.1 STUDY DESIGN	46
3.2 RESEARCH APPROACH	47
3.3 STUDY POPULATION AND SAMPLING	48
3.3.1 Sampling	48
3.3.2 Sample size	49
3.4 INSTRUMENTATION	49
3.4.1 The questionnaire	49
3.4.2 Semi-structured interviews	52
3.5 THE RESEARCH PROCEDURE	54
3.6 DATA MANAGEMENT AND STATISTICAL ANALYSIS	56
3.6.1 Analysis of quantitative data	56
3.6.2 Analysis of qualitative data	57
3.7 ETHICAL CONSIDERATIONS	57
3.8 ASPECTS OF VALIDITY AND RELIABILITY	58
3.9 LIMITATIONS OF THE STUDY	60
3.10 SUMMARY OF THE CHAPTER	61

CHAPTER FOUR

RESULTS AND DISCUSSION OF THE QUESTIONNAIRE.....	62
4.1 RESPONSE RATE	62
4.2 GENERAL INFORMATION ON PARTICIPANTS	62
4.3 PREFERRED CLINICAL STRUCTURE	63
4.4 GROUPWORK IN CLINICAL EDUCATION.....	63
4.5 THE CLINICAL TEACHER	67
4.5.1 Clinical teacher roles	67
4.5.2 Clinical teacher attributes	69
4.6 TEACHING AND LEARNING ACTIVITIES	71
4.6.1 Teaching-learning activities	71
4.6.2 Teaching-learning strategies	72
4.6.3 Further analysis and discussion of teaching-learning activities	73
4.7 SUMMARY OF THE CHAPTER	78

CHAPTER FIVE

RESULTS AND DISCUSSION OF THE INTERVIEWS.....	79
5.1 PROFILE OF THE INTERVIEWEES	79
5.2 ANALYSIS OF QUALITATIVE DATA	79
5.3 VIEWS OF THE STUDENT INTERVIEWEES	80
5.3.1 Best clinical learning experience	80
5.3.2 Demonstrations of patient management	80
5.3.3 Feedback during demonstration of patient management	82
5.3.4 General feedback	83
5.3.5 Discussion	84
5.3.6 Reflection and self-assessment	85
5.3.7 Mock test	86
5.3.8 Peer assessment	87
5.3.9 Responsibility of the student	88
5.3.10 Motivation	88
5.3.11 Other findings	89
5.3.12 The roles and attributes of the clinical teacher	90
5.4 VIEWS OF THE CLINICAL TEACHER INTERVIEWEES	93
5.4.1 Clinical teaching	93
5.4.2 Demonstrations	93
5.4.3 Discussion	93
5.4.4 Clinical reasoning	94
5.4.5 Feedback	94
5.4.6 Mock tests	95

5.4.7 Peer assessment	95
5.4.8 Reflection and self-assessment	95
5.4.9 Responsibility of the students	96
5.4.10 Other findings	96
5.4.11 The roles and attributes of the clinical teacher	96
5.5 SUMMARY OF THE CHAPTER	97

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS..... 98

6.1 DISCUSSION OF FINDINGS	98
6.1.1 Clinical education structure	98
6.1.2 Collaborative learning	99
6.1.3 Teaching and learning activities	99
6.1.3.1 Demonstrations of patient management.....	100
6.1.3.2 Feedback	102
6.1.3.3 Discussion	103
6.1.3.4 Mock tests/simulated clinical competency assessment	104
6.1.3.5 Peer assessment	105
6.1.3.6 Reflection and self assessment	105
6.1.3.7 Responsibility for learning	107
6.1.4 Teaching and learning strategies	107
6.1.5 The clinical teacher	108
6.1.5.1 Roles of the clinical teacher	108
6.1.5.2 Attributes of the clinical teacher	110
6.1.6 The role of the patient	111
6.2 RECOMMENDATIONS	111
6.2 OPPORTUNITIES FOR FURTHER RESEARCH	114
6.3 CONCLUDING COMMENTS	116

REFERENCES	117
APPENDIX A	122
APPENDIX B	127
APPENDIX C	132
APPENDIX D	136
APPENDIX E.....	137
APPENDIX F.....	138
APPENDIX G	139
APPENDIX H	140
APPENDIX I.....	147

LIST OF TABLES AND FIGURES

Table 2.1	Teacher-centered paradigm vs. learner-centered paradigm.....	16
Table 2.2	Different approaches to learning	22
Table 2.3	The five scales of the Clinical Learning Environmental Inventory.....	36
Table 2.4	Models of clinical education in physiotherapy and benefits of each model	43
Table 2.5:	Factors and behaviours conducive to clinical learning	45
Table 4.1	Response rate of the sample	62
Table 4.2:	Student participants' reasons for preferred group size	65
Table 4.3:	Clinical teacher participants' reasons for preferred group size.....	66
Table 4.4:	Focus on demonstrations	74
Table 4.5:	Focus on discussion	75
Table 4.6:	Focus on feedback	75
Table 4.7:	Focus on assessment	76
Table 4.8:	Focus on other teaching-learning activities	77
Figure 2.1	Kolb's four-step cyclical process of learning	28
Figure 3.1	Research procedure	56
Figure 4.1	Students' preferred group size for clinical teaching	64
Figure 4.2	Clinical teachers' preferred group size for clinical teaching	64
Figure 4.3	The roles of the clinical teacher as viewed by students	67
Figure 4.4	The roles of the clinical teacher as viewed by teachers	68
Figure 4.5	Most important clinical teacher attributes as seen by students	69
Figure 4.6	Most important clinical teacher attributes as seen by teachers	70
Figure 4.7	Students' view of teaching-learning activities in which they learn the most	71
Figure 4.8	Clinical teachers view of teaching-learning activities in which students learn the most	72
Figure 4.9	Students' view of most beneficial teaching-learning strategies	72
Figure 4.10	Clinical teachers view of most beneficial teaching-learning strategies	73

LIST OF ABBREVIATIONS

HEQC – Higher Education Quality Committee

HEQF – the Higher Education Quality Framework

NQF - National Qualifications Framework

OBE – Outcomes-based education

SAQA – the South African Qualifications Authority

SD – Standard deviation

SU – Stellenbosch University

SWOT analysis - Strength, Weakness, Opportunity and Threat analysis



CHAPTER ONE

ORIENTATION TO THE STUDY

Chapter 1 provides an overview of the study and explains the concepts used in the study. The aim of this chapter is to describe the rationale behind the study and to explain the context within which it was undertaken. The importance and context of clinical education as well as the concept and importance of student-centred education is also outlined. The research question and aims of the study are stated in this chapter, while it also includes a condensed guide to the research design and methodology that was used. The chapter ends with an outline for the rest of the thesis.

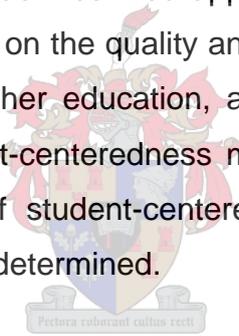
1.1 INTRODUCTION

Clinical education is an important and distinct part of health care education. It is in clinical education situations that students have to integrate the knowledge, skills, attitudes and values they have learnt, and apply them holistically to the patient. Cognitive, psychomotor and affective skills are thus integrated in the clinical realm. It is during clinical experience that theory consolidates into practice. The term clinical education as used in this study refers to the supervised clinical practice of physiotherapy students in their clinical/professional role at the health care centre where the student is completing service learning.

Several authors agree that clinical education is important for the development of professional skills and that it is an essential element of the health care educational programme (Stroschein, Hagler & May, 2002:161; Chan, 2001:448; Williams & Web, 1994:1; Higgs, 1993:243). The importance of clinical education is reiterated in that the Health Professions Council of South Africa suggests that physiotherapy students in South Africa should complete 1 000 hours of clinical education as part of their undergraduate training (Frieg & Lochner, 2005:22). According to these authors, the suggested hours compare with the required hours of physiotherapy clinical education in the United Kingdom and United States of America.

Clinical education provides a context for the application of prior knowledge and the integration of new learning. Students therefore have to combine and integrate the knowledge, skills, attitudes, values and philosophies of the profession that they have learnt in the classroom or practical laboratories and apply these to a real patient, with real problems. It is therefore not surprising that Stroschein *et al.* (2002:161) identify the clinical learning environment as the best area to facilitate skills and attitudes required for patient management, as students are learning within the context of clinical practice. These skills required may include problem solving, clinical reasoning, communication skills, interpersonal skills, time and patient management, documentation skills, skills in self-directed learning as well as specific physiotherapeutic assessment and management skills. Clinical education thus forms an important part of the education of physiotherapy students at Stellenbosch University (SU).

In its Strategy for Teaching and Learning (2001:3), SU embraces a student-centred approach to teaching. Having a student-centred approach means that teaching is aimed at facilitating learning, with the focus on the quality and quantity of what students learn. In the current changing context of higher education, all spheres of education need to be assessed to determine what student-centeredness means and to establish whether it is achieved. Hence, the meaning of student-centeredness in the clinical education of physiotherapy students needs to be determined.



1.2 BACKGROUND TO THE STUDY

Higher education has undergone significant changes in the past few years. SU as a higher education institution revisited and reformed programmes according to principles as suggested by the South African Qualifications Authority (Boughey in Gravett and Geysler, 2004:8). The undergraduate physiotherapy degree curriculum at SU was remodelled to an outcomes-based programme in 1998. One of these outcomes states that the end result of the physiotherapy clinical module is competent physiotherapy practitioners.

Since physiotherapists are first-line practitioners, it is important that newly qualified physiotherapists can demonstrate general competence and a range of abilities that will allow them to function satisfactorily and safely in their professional role. Basic clinical competence should thus be achieved by the end of the undergraduate education.

Teaching and learning activities have to be directed towards the achievement of the outcomes of the Clinical Physiotherapy module.

In the undergraduate physiotherapy curriculum at SU, the first two years of training form the foundation years, where basic knowledge regarding the movement and function of the human body is learnt. In these foundation years, students learn specific physiotherapeutic reasoning skills and strategies to assess and manage patients. Physical skills (or techniques) are practised on fellow students. In the third year of the physiotherapy curriculum, a new dimension in training is added, namely that students take part in service learning, working in health care centres where they take responsibility for assessing and managing patients. Students are assisted in this process by clinical teachers. The service learning required of students is referred to as their clinical education/training. The knowledge, practical skills and reasoning skills for physiotherapy at SU are taught and learnt at the Tygerberg Campus, while the clinical application of the learnt knowledge and skills are taught and learnt at the health care centres. Students thus learn in two different learning environments (Tygerberg Campus and health care centres).

The stated learning environment and culture of student-centred teaching at SU is well communicated and assured by strategies and policies in place (SU Strategy for Teaching and Learning, 2001:3). However, due to certain constraints, the learning environment in the clinical training areas may not be as well controlled as desired. Constraints in the clinical milieu include limited resources and funding, shortages of clinical placements, time constraints, tension between providing adequate patient care and providing adequate learning experience and changes regarding clinical personnel and patients (Conrick, 2001:2; Stroschein *et al.*, 2001:163). Irby (1995:898) also found that the clinical setting to be variable, unpredictable, immediate, and lacking continuity. Another constraint includes that the primary aim in the Health Care centres is to provide quality health care to patients. Student education may thus sometimes take a secondary role to patient care. In the student-centred paradigm, the experience of the student is seen as most important, but in clinical education the patient's care is often most important and the student takes the role of a service provider. The primary role of the student thus changes from one set of circumstances to the next. The role of the student as service provider may influence the learning process of the student. Learning in clinical education is thus dependent on the clinical teacher, the student and the patient.

The clinical learning environment differs vastly from the classroom environment; therefore clinical teaching is different from classroom teaching. Chan (2001:447) states that the clinical activities take place in a complex social context where the teacher monitors patients', students' and clinicians' needs. In the classroom, learning activities may be planned and structured, yet in the clinical environment, unplanned activities often occur with patients and other health care providers. The element of uncertainty often provokes anxiety and feelings of vulnerability amongst health care learners (Massarweh, 1999:3). Learning in the clinical environment thus poses a bigger threat than in the classroom (Chan, 2001:447).

Different models of providing clinical education exist (Stroschein *et al.*, 2002:164-169; Gandy in Shephard & Jensen, 1997:149-151). Currently, physiotherapy students at the Physiotherapy Department, SU are supported in their clinical education by both the clinician at the health care centre, and by a clinical lecturer. The method of clinical education that is used consists of external facilitation and internal facilitation (Conrick, 2001:1). In internal facilitation, the clinician (physiotherapist) on the area supervises students; this supervision is not consistent in all clinical areas regarding the ratio of clinician to student and the type and amount of support given. The student reports to the clinician and can ask advice from the clinician. The clinician is responsible for writing a report on the student's progress on the clinical placement, using specific given criteria.



The clinical lecturer visits the student once a week (external facilitation), and spends one hour or more with the student. It is in this time that teaching and learning activities take place. The clinical lecturer is responsible for assessing the student's clinical competence at the end of the clinical rotation. Each clinical lecturer also acts as a mentor for the students on a specific clinical placement.

In the current study reference will be made to both the clinician and the clinical lecturer as the clinical teacher (unless specifically differentiating between the two), as both have a role in the clinical education of the student. The use of the term clinical teacher is used to be in line with the use in international literature.

1.3. MOTIVATION FOR THE STUDY

The importance of investigating what constitutes student-centred education at SU has been emphasised in the SU Self-Evaluation Report (2005:139). This report, completed as preparation for a quality audit by the Higher Education Quality Committee (HEQC), states that major challenges remain and that there is room for improvement in the understanding of student-centred learning and teaching and using teaching and learning activities that are truly considered to be student-centred (SU Self-Evaluation Report, 2005:139). In this respect, the current study is significant as it addresses the very aspect of student-centred education. It does so by determining the views of two of the stakeholders (students and teachers) in clinical education on effective and preferred clinical education.

Little is known about teaching-learning strategies that clinical teachers use in clinical education and the perceived efficacy of these. Knowledge of these aspects may lead to appropriate changes made in clinical education thereby enhancing learning in the clinical environment. As teaching supports learning, it is useful to determine which teaching-learning activities students view as effective and useful. This could provide baseline information on student-centred clinical education. Chan (2001:457) states that better understanding of the learning environment and improvement of teaching and learning can be found by examining the ways learning environments are interpreted by students, since students ultimately respond to what they perceive as important. Students and clinical teachers are role players in clinical education therefore the views of the students need to be triangulated against the views of the teachers. Since clinical teachers as facilitators and assessors of learning have experience in the field, their views on clinical education are valuable.

Furthermore, no guideline currently exists to assist the clinical teachers in physiotherapy on their mode of teaching. In other words, every clinical teacher's clinical teaching differs, as it depends on his/her own discretion. This leads to varied support and teaching by clinical teachers and varied learning by individual students and on the same clinical rotation. Cross (1995:506) voices these aspects as a cause for concern in clinical education, as they could lead to inconsistency and inequity of students' learning experiences, lack of validity and reliability in assessment, varying standards of clinical teaching, varying levels of motivation among clinical teachers and lack of time and staff devoted to clinical education. The impact of the above-mentioned constraints on learning

outcomes and overall quality of clinical education experience could be profound. The results of this study may thus be used as a tool to drive improvement and enhance learning in the clinical environment in providing baseline information to develop an educationally sound model of clinical education. This model could then serve as an appropriate guideline in clinical education to assist clinical teachers in sound clinical teaching.

Clinical teachers do not necessarily have an educational background and might want to know more about the learning and teaching processes. In a study by McDonough & Osterbrink (2005:89) clinical teachers expressed their lack of knowledge on the teaching and learning process. Determining what constitutes effective clinical education could help focus clinical education training programmes for teachers. Addressing the educational needs of clinical teachers may be a way to support clinical teachers and optimise student learning in clinical education. It should be noted that at SU, clinical teachers involved in clinical education in physiotherapy, are strongly motivated to attend a clinical education training programme consisting of four half-day workshops, presented every two years. This programme is, however, not compulsory for all clinical teachers. The focus of the training programme is on the educational process and teaching methods. The effect of this workshop on clinical teachers is currently being evaluated in another study.

Specific elements of the clinical module are currently being evaluated on a yearly basis. One of these assessments includes feedback on the clinical module, administered by the Centre for Teaching and Learning, SU. This assessment focuses on general aspects, such as outcomes, learning activities, supervision, tasks, assessment, organisation and workload. The second assessment focuses on the students' perceptions of selected clinical teachers regarding selected factors pertaining to organisation, teaching style and assessment. These investigations are used as feedback for the clinical teacher. It is however, not specific enough to be used for the purposes of this study. Both the above assessments aim to provide a general impression on the clinical module and therefore do not elaborate on what students view as effective educational strategies, or on their needs regarding clinical education. A more thorough, in-depth study is necessary to determine these factors to optimise clinical education. The importance of the current study is highlighted by Conrick's statement (2001:4) that in clinical education two factors are often taken for granted. One of these factors is that students will learn clinical skills by just doing clinical practice, i.e. that clinical learning is an automatic process. The second is

that expertise in clinical practice implies good teaching of clinical skills. The latter inconsistency is also confirmed by Stroschein *et al.* (2002:162).

Previous researchers found that the attributes of the clinical teacher and the relationship between the student and the teacher have a powerful effect on learning (Kilminster & Jolly, 2000:843; Higgs, 1993:243; Cross, 1995:506). This aspect was included in the current study for three reasons:

- The effect of clinical teacher roles and attributes on learning is profound.
- Most research articles obtained on the topic with specific reference to physiotherapy are outdated and the information needs to be updated.
- The higher education profile has changed to include a more diverse student body (Geysler in Gravett & Geysler, 2004:141). This could lead to changes in expectations that students have of clinical teachers.
- None of the previous studies on the attributes of clinical teachers was done in the South African context.

On including aspects of clinical teacher attributes, knowledge on the topic could be updated and changes (if any) in the expected role of the clinical teacher in physiotherapy could be explored.

Carefully conducted evaluations of clinical teaching are valuable to improve clinical education (Wolfhagen & Gijsselaers, 1997:1). Clinical education needs to be evaluated on an ongoing basis as it can point out the strengths and weaknesses of the system, thereby identifying areas that need improvement. This study is significant in that it will investigate the teaching-learning activities used in clinical education and the perceived efficacy thereof, as well as the role of clinical teacher attributes. Research on clinical education in the literature focuses mostly on the attributes of the clinical teacher. No study specifically investigating the efficacy of teaching-learning activities in physiotherapy clinical education could be found in the literature. It is with the above-mentioned factors in mind that the main research question and study aims were formulated and the study conducted.

1.4 RESEARCH QUESTION AND AIMS

1.4.1 Research question

What do physiotherapy students and clinical teachers view as effective teaching-learning strategies in clinical education in terms of learning at the Physiotherapy Department, SU?

1.4.2 Primary aim

The primary aim of the study was to investigate what physiotherapy students and clinical teachers at the Physiotherapy Department, SU view as effective clinical education.

1.4.3 Secondary aims

The secondary aims were to determine:

- which teaching-learning activities students and clinical teachers view as being effective in clinical education;
- what students and clinical teachers view as roles and attributes of an effective clinical teacher; and
- what the explanations are for views as identified above.

In achieving the above aims, one might be able to determine what students and teachers view as important factors in student-centred clinical education. A better understanding of what constitutes quality clinical education from the students' perspective would be valuable in providing better clinical educational experiences. The procedure to achieve the aims is set out below.

1.5 RESEARCH DESIGN AND METHODOLOGY

1.5.1 Research design

An empirical, descriptive study was conducted to achieve the aims of the study. The study was exploratory and sought to investigate and describe views held by the indicated group.

1.5.2 Research approach

The research approach that was adopted was partly positivist and partly interpretivist (Van Rensburg in Henning, 2004:16) in order to generate quantitative as well as qualitative data. Firstly, it was determined what teaching-learning activities and clinical teacher

attributes students and clinical teachers view as effective in the clinical education of physiotherapy students. Secondly, it was established how many students and teachers have these preferences, so as to determine the relative importance of these preferences for the group as a whole. Following the generation of quantitative data, qualitative methods of data generation were used to ascertain why these identified preferences existed. The study therefore explored learning and teaching preferences to generate understanding of why these preferences exist from the point of view of current physiotherapy students and their clinical teachers.

The study took the form of a situational case study (Mouton, 2001:149) as it focused on an individual department (the Physiotherapy Department at SU) and investigated one aspect of the programme (clinical education). A case study is seen to be holistic, to have depth and to offer the opportunity to provide explanations (Denscombe, 1998:31). This view appealed to the researcher, who wanted to focus on one aspect of the physiotherapy programme in order to obtain an in-depth view of the programme by looking at different perspectives.

The study focused on the undergraduate Physiotherapy degree programme at SU. Although there are several departments of physiotherapy, at different universities in South Africa, the researcher decided to focus on one department, for several reasons. The researcher, being an employee at this department, and a clinical teacher herself, had a specific interest in the Clinical Education programme at the specific department. The researcher also had easy access to the participants, given her personal contact with the department. Furthermore, seeing that the study aimed to explore the notion of student-centredness in physiotherapy clinical education, an in-depth study at one department seemed appropriate. The current study could thus be used as a pilot study for further research into the topic.

1.5.3 Study population

The study population included all physiotherapy students who had had clinical experience, as well as all physiotherapists involved in the clinical education of these students. All enrolled physiotherapy students who had had clinical experience in taking responsibility for patient management in 2005 were invited to participate in the study. All third- and fourth-year physiotherapy students were thus included. The total number of students in this category was 80 (40 third-year and 40 fourth-year students). All 23 clinical lecturers, and

14 clinicians directly involved in the clinical education of the above-mentioned students were also recruited to participate in the study.

1.5.4 Instrumentation

Two data-generating tools were used in the study. To generate quantitative data, a questionnaire was used. Qualitative data were generated via semi-structured interviews.

1.5.4.1 Questionnaires

Following a study of the literature, two questionnaires (for students and teachers, respectively) was designed by the researcher with the focus on the elements of student-centred learning, applicable in the clinical context (see Appendix A & B). No suitable questionnaire to address the research question could be found in the literature. The questionnaire consisted of open and closed questions, generating nominal and ordinal data. The questionnaire was available in Afrikaans and English. Prior to administering the questionnaire, a pilot study was done at another Physiotherapy department at a university in the Western Cape. The necessary changes to the questionnaire were made.

The questionnaire was then administered to students by allocating time to complete the questionnaire in a given learning session. The clinical teachers' questionnaires were mailed to them and a stamped, self-addressed return envelope was supplied by the researcher. Every questionnaire was accompanied by a covering letter (Appendix D). Included in the covering letter was the aim of the study, the return date for the questionnaire and the contact information of the researcher.

1.5.4.2 Semi-structured interviews

Following the preliminary data analysis of the students' completed questionnaires, the researcher developed an interview schedule (Appendix C). The interviews were designed to address issues raised by the students and identified in the questionnaire. The aim of the interviews was to determine what experiences the interviewees had had in this context, and/or their views of these topics. A random sample of six third-year, six fourth-year physiotherapy students and six clinical teachers was chosen for the interviews. One-to-one interviews were conducted due to the flexibility of this approach, and in order to gather ideas and opinions from one data source at a time. Interviewees were thus given the opportunity to express their own opinions in a non-threatening, private environment.

The interviews were recorded using a digital voice recorder, downloaded on audio compact discs and later transcribed by the researcher. The researcher also kept field notes on non-verbal communication, context and atmosphere during and after the interviews.

1.5.5 The research procedure

Permission to conduct the study was obtained from the Physiotherapy departmental chairperson and from the Committee for Human Research at the Faculty of Health Sciences, SU.

Following the finalisation of the questionnaires, a pilot study was performed to determine if the questions and instructions had been clearly understood by the respondents. A sample from another Physiotherapy Department in the Western Cape was recruited for this purpose. This enabled the researcher to establish an estimated time for the completion of the questionnaire. The necessary changes to the instrument were made.

The questionnaire was then administered to the students in the last clinical rotation for the third- and fourth-year learners respectively. At the beginning of session, the researcher informed the groups of students of the aims of the study. Written consent was requested from the participants (Appendix E), with the understanding that a participant could withdraw from the study at any stage. The researcher then handed out the questionnaire, covering letter and informed consent form, all in the language of choice. The students were free to complete the questionnaires at the session or in their own time, and return them by putting them in a box provided by the researcher at a central place in the Physiotherapy Department. Most students preferred to complete the questionnaire in the allocated time. A few handed in their completed questionnaires at a later stage.

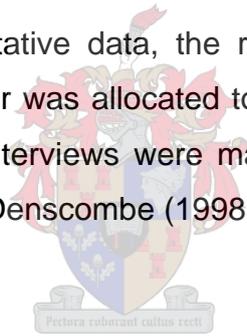
The questionnaire, as well as a covering letter and informed consent form explaining the aim of the study and requesting consent, was mailed to clinical teachers in the specific clinical area. The addresses and preferred communication language of clinical teachers were obtained from the clinical coordinator of the Physiotherapy Department, SU. A stamped return envelope was provided. A cut-off date for the return of completed questionnaires was included in the covering letter. As some questionnaires were not returned by the proposed date, reminders to all clinical teachers were sent via the postal system.

The completion and preliminary analysis of the completed questionnaires and the subsequent development of the interview schedule followed. The researcher recruited the sample of students and clinical teachers for the interviews via telephone. An appointment was set up during the day, when students had time off or when clinical teachers had time available. Written informed consent for the interviews was requested and obtained prior to the interviews. The interviews were recorded using a digital voice recorder. The researcher kept field notes during and after the interviews.

1.5.6 Data management and statistical analysis

A statistician was consulted on issues relating to data management and statistical analysis. The results of the questionnaire were captured using a data-capturing sheet on computer-aided software (Excel). Data were then further analysed on a statistical programme (Statistica 7). The questionnaire data was analysed using descriptive measures (proportions, means and histograms).

For the data analysis of the qualitative data, the recorded audio compact discs were transcribed. A unique serial number was allocated to each of the data sets for reference purposes. Back-up copies of all interviews were made. The texts were then analysed according to guidelines as given in Denscombe (1998:210-212).



1.5.7 Ethical considerations

The protocol for the study was submitted to and accepted by the Committee for Human Research at the Faculty of Health Sciences, SU and was conducted according to internationally accepted ethical standards and guidelines. Permission to perform the study as well as the pilot study was obtained from the respective departmental chairpersons of the Physiotherapy departments involved.

The aim of the study was described and written informed consent was obtained and retained for the questionnaires as well as for the interviews in all cases. The participants understood that participation was voluntary and that they had the freedom to withdraw from the study at any time during the study. Measures were taken to ensure confidentiality.

The results of the research will be disseminated to all relevant stakeholders, including the higher education institution, the students, the clinical teachers, the health care centres and the physiotherapy profession.

1.6 OUTLINE OF THE THESIS

Chapter 1 orientates the reader to the study. An overview, motivation and background to the study are given in this chapter. Chapter 1 includes the research question and aims.

Chapter 2 discusses the literature studied, elaborating on the topics of student-centred education, outcomes-based education and perspectives on teaching and learning. It then outlines how these principles could influence the clinical education programme in health care education and specifically physiotherapy, by discussing the clinical education context and the clinical learning environment.

The research design and methodology are discussed in detail in Chapter 3. In this chapter, the researcher endeavours to justify decisions made on the design and methodology of the study.

In Chapter 4, the results of the questionnaire (quantitative data) are displayed and discussed. The quantitative data, generated from the interviews, are displayed and discussed in Chapter 5.

Chapter 6 synthesises the findings of the study in relation to the research questions, seeking to provide answers for the questions asked. The implications of the study for practice are also discussed. The chapter includes some conclusions and recommendations for further research.

CHAPTER TWO

LITERATURE STUDY

In Chapter 2 relevant literature pertaining to the research question will be discussed. Firstly, the context of higher education will be explored in relation to learner-centred education and outcomes-based education (OBE). Recent perspectives of teaching and learning will also be included. The applicability of these principles in the physiotherapy curriculum will be discussed. This will be followed by a discussion on factors influencing the quality of clinical education in health care training. The chapter ends with a summary and conclusion on the literature studied.

2.1 THE CONTEXT OF HIGHER EDUCATION

Stellenbosch University (SU), in its Strategy for Teaching and Learning (2001:5) places emphasis on OBE, student-centred learning and teaching, self-directed and independent learning, resource-based learning, lifelong learning, functional assessment, the development of generic abilities, supporting a more diverse university community and the use and implementation of information and communication technologies. The focus in this literature study will be on student-centred education, OBE and theoretical perspectives on teaching and learning in the context of the undergraduate Physiotherapy degree programme at SU.

2.1.1 A Learner-centred paradigm

In recent years, a paradigm shift has taken place in higher education from a teacher-centred to a learner-centred focus. Barr & Tagg (1995:13) expand on this, stating that a higher education institution is an institution that exists to produce learning, not to provide instruction. In the learning paradigm, both the student and the teacher take responsibility for learning.

In the Strategy for Teaching and Learning (2001:3), SU embraces this student-centred approach to teaching. Having a student-centred approach means that teaching is aimed at facilitating learning, with the focus on the quality and quantity of what students learn. In designing and implementing learning, the experience of the student is most important. In this respect, Barr & Tagg (1995:13) commented that higher education institutions' mission

is not instruction but rather that of producing *learning* with every student by *whatever* means work best.

The teacher's role is thus that of a facilitator, giving direction to learning, with the student actively participating in the learning process. While the aim of education/teaching has thus remained to equip student with knowledge and skills, the method by which it is achieved has changed. The teacher's role can no longer focus on delivering instruction, where instruction is seen as the transfer/delivery of knowledge to the student. Instead the teacher becomes a facilitator of learning. Facilitation implies that the teacher elicits a process of discovery and construction of knowledge by the students themselves. The end goal is most important: to produce learning (Barr & Tagg, 1995:16).

Barr & Tagg (1995:16) contrast the teacher-centred approach to teaching with the learner-centred approach to teaching. In Table 2.1 below, Bitzer in Gravett & Geysler (2004:44-45) summarises the main differences between the two paradigms:

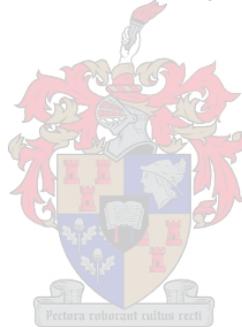


Table 2.1: A teacher-centred paradigm vs a learner-centred paradigm

TEACHER-CENTRED PARADIGM	LEARNER-CENTRED PARADIGM
MISSION AND OBJECTIVES	
Provide/deliver instruction Transfer knowledge from teacher to student Offer courses and programmes Improve the quality of teaching Achieve access for diverse students	Produce learning* Student constructs knowledge by a process of discovery * Create powerful learning environments* Improve the quality of learning* Achieve success for diverse students*
MEASURES OF SUCCESS	
Inputs and resources Quality of entering students Quality and quantity of resources Student numbers, growth in profit Quality of lecturers (thus instruction)	Learning and student outcomes Quality of student learning and outputs Quality and quantity of outcomes Learning growth and efficiency Quality of students (thus learning)
TEACHING/LEARNING STRUCTURES	
Atomistic, parts prior to the whole Time held constant, learning varies Periods and course structure Teaching starts/ends at the same time for everybody One teacher, one classroom Focus on summative assessment at the end of the course Private assessment Degree equals accumulated credit hours Independent disciplines and departments Covering material Grading within classes by instructors	Holistic, whole prior to parts* Learning held constant, time varies Creation of learning environments* Learning starts and ends at different times for different purposes Whatever learning experience works, i.e. a variety of learning experiences Assessment throughout learning experience* Public assessment Degree equals demonstrated knowledge and skills Cross discipline/department collaboration Specified learning results* External evaluations of learning
LEARNING THEORIES	
Knowledge is out there Knowledge is provided by the teacher in bits Learning is controlled by teachers Learning is passive Physical presence of the teacher is a pre-requisite for learning Learning is competitive and individualistic Talent and ability are found in some	Knowledge is shaped by individual experience* Knowledge is constructed, created and acquired by learners Learning is managed and directed by learners Active learning is necessary Physical presence of the teacher is not a pre-requisite for learning Learning is cooperative, collaborative and supportive Talent and ability are generally present

(Source: Bitzer in Gravett & Geysler, 2004:44-45)

The emphasis in student-centred education is thus on the learning experience of the student. Both the teacher and the student take part in the process. The teacher's role is

planning powerful learning environments in which the student can actively participate to construct his/her own knowledge. These aspects, marked with an asterisk (*) in Table 2.1, form an integral part of and motivation for the study.

In the current changing context of higher education all spheres of education need to be assessed to determine what student-centredness means and to establish whether it has been achieved. There is a need to assess specifically what student-centredness in the clinical context means. It could be a step towards assuring quality and efficacy in clinical education.

2.1.2 Outcomes-based education

On the issue of quality and efficacy in teaching and learning, one needs to take into account the transformation that has taken place in higher education in post-apartheid South Africa. The establishment of the National Qualifications Framework (NQF) and the implementation of outcomes-based education (OBE) are two of these changes (Boughey in Gravett & Geysler, 2004:8). Programmes at higher education institutions, including SU, have been revisited and reformed according to principles as set out by the NQF. As with all qualifications registered with the South African Qualifications Authority (SAQA), the undergraduate Physiotherapy degree programme follows an outcomes-based approach to learning.



Outcomes have been defined by Spady (1994, in Fraser, Killen & Newman, 2005:239) as “high quality, culminating demonstrations of significant learning in context”. The principle of OBE entails clear focus and organisation of everything in the educational system around what is essential for all students to be able to do successfully at the end of their learning experience (Spady, 1994 in Fraser *et al.*, 2005:239). In an OBE programme the outcomes the students should achieve are clearly and unambiguously specified. Harden, Crosby & Davis (1999:7) also expand on the principles of OBE as focusing on the end product of learning and defining what the learner is accountable for. The emphasis will thus be on what kind of physiotherapist one will be, rather than the content of educational process. OBE is a way of designing, developing and delivering teaching in terms of its intended goals and outcomes. Outcomes determine the curriculum content and its organisation. Harden, *et al.* (1999:7) explains that in OBE decisions about the curriculum are driven by outcomes that students should display at the end of a course. Outcomes thus influence the teaching methods and strategies, the courses offered, the assessment process, the

educational environment and the curriculum organisation. OBE provides a powerful framework for the curriculum, by unifying the curriculum and preventing it from becoming fragmented. It also provides a framework for curriculum evaluation (Harden *et al.*, 1999:9).

Since the adoption of OBE in the physiotherapy programme, SU, outcomes have been set for clinical education. The module Clinical Physiotherapy is considered to be on level eight of the proposed Higher Education Quality Framework (HEQF) (Ministry of Education, 2004:24). This is due to the complex, real-world problems that are faced in clinical education, which need a comprehensive, systematic and in-depth knowledge base. The outcomes of the module Clinical Physiotherapy include that, at the end of the module, the student should be able to:

- Demonstrate sufficient knowledge, skill and professional behaviours to effectively manage patients within the framework of the bio-psycho-social model,
- Appropriately demonstrate a preventive, promotive and curative approach to health care,
- Manage him/herself professionally within the health care team,
- Recognize different cultures, understand appropriate health care policies and structures and implement appropriate strategies,
- Demonstrate an attitude of professional responsibility towards the patient, the profession and the community,
- Have sufficient knowledge, skills and professional attributes to be able to discuss a patient effectively within the psychosocial model and be able to implement it clinically.

(Guidelines for Clinical Physiotherapy, SU, 2005:2)

These outcomes aim to produce a graduate who is clinically competent and who can manage him/herself in the workplace. If clinical competence is an outcome of clinical education, then, according to OBE, teaching and learning activities, as well as assessment procedures should be designed to achieve the acquisition of clinical competence. Fraser *et al.* (2005:239) emphasise that the definition of OBE implies that students should be able to demonstrate what they have learnt in an authentic situation (i.e. clinical context). They further argue that demonstration of outcomes equals demonstration of competence.

2.1.3 Clinical competence

Physiotherapists are first-line practitioners, it is therefore important that newly qualified physiotherapists can demonstrate general competence and a range of abilities that will allow them to function satisfactorily and safely in their professional role. Clinical competence should thus have been attained by the end of the undergraduate education.

Various definitions of competence exist. Saunders (2000) in Fraser *et al.* (2005:231) defines competence as the knowledge, skills and behavioural attributes required to perform a job to an acceptable standard. Fraser *et al.* (2005:231) question what an acceptable standard is. They state that the expected standard for a newly qualified practitioner should be *beginning level competence*. The authors expand the definition of competence to include applied competence (p234). Applied competence embodies three kinds of interconnected competencies which are described as practical competence, foundational competence and reflexive competence. Practical competence entails demonstrated ability in an authentic context. It means considering a range of capabilities for action, making considered decisions on which possibilities to follow and performing the action that was decided upon. Practical competence is grounded in foundational competence where the learner demonstrates an understanding of the knowledge and thinking fundamental to the actions taken. Both practical and foundational competence is integrated through reflexive competence where the learner demonstrates the ability to integrate and connect performances and decision making with understanding. Reflexive competence also encompasses the ability to adapt to change and unforeseen circumstances and to motivate adaptations (Fraser *et al.*, 2005:234).

These definitions of competence also correspond with Biggs's (1999:41) kinds of knowledge to be understood. Biggs (1999:41) states that knowledge is the object of understanding. He distinguishes between various kinds of knowledge. Declarative knowledge refers to knowing about things (no personal experience). Procedural knowledge refers to skill-based knowledge; getting the sequence and actions right; having the right competencies in given situations. Conditional knowledge refers to knowing why, when and under which conditions one should do this or that. Functioning knowledge refers to the performance of understanding (putting declarative knowledge to work by solving problems, personal experience). Functioning knowledge involves declarative/academic knowledge, procedural knowledge (having the skill) and conditional knowledge (knowing the circumstances in which to use them). Functional knowledge in

the context of physiotherapy education can be seen as the ability to demonstrate competence in the clinical situations.

Relating the concept of competence to physiotherapy, the Chartered Society of Physiotherapists in the United Kingdom (2005:1) defines clinical competence as “the provision of high quality treatments or services in a way that allows the recipient to achieve maximum health gain”. Competence is further explained as the right person

- doing the right thing (by implementing evidence based practice),
- in the right way (using skills),
- at the right time (when the patient needs it),
- in the right place (location of treatment/service),
- with the right result (clinical effectiveness, maximising health gain).

Aspects of foundational and reflexive competence, culminating in practical competence, can be seen in this definition of clinical competence.

It is clear from the above discussions that clinical competence involves drawing on fundamental knowledge, skills, values and attitudes, combining them and reasoning about what is needed and applicable before they are applied in a given situation. As Parsell and Bligh (2001:410) state, knowledge is only useful if it is applied appropriately in different circumstances. Seeing that clinical competence is one of the most important outcomes of clinical education in physiotherapy, it is vital that learning opportunities are created in which clinical competence are facilitated.

2.2 PERSPECTIVES ON TEACHING AND LEARNING

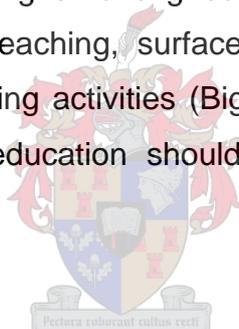
2.2.1 Teaching

There is no one best method of teaching (Biggs, 1999:2). Teaching needs to be adapted according to the needs and context, subject matter, resources, the students and the teacher's own strengths and weaknesses. The adaptability of teaching to suit given circumstances is vital in the clinical context, where many constraints exist. Biggs (1999:26) defines good teaching as getting most students to use higher order cognitive level processes that the more academic students use spontaneously. It is also important

to teach and learn higher order cognitive skills in the clinical situation, where clinical reasoning is a prerequisite for the effective management of a patient.

Biggs (1999:ix) advocates a system of good teaching which he calls constructive alignment. He describes constructive alignment as the marriage of constructive understanding of the nature of learning and the aligned design for teaching (1999:26). This means that learning should be constructed by aligning teaching. Learning is thus the result of constructive activity by the student. In constructive alignment curriculum objectives, teaching methods and assessment tasks are aligned by focusing on student-related activities in instruction.

The curriculum, teaching methods and assessment need to be compatible. When there is alignment between what teachers want, how they teach it and how they assess it, teaching is much more effective (Biggs, 1999:26). Good teaching will encourage students to use a deep approach to learning. If teaching is not aligned, this may lead to a breakdown in the system, which will produce poor teaching, surface learning, unmet expectations, and inappropriate and lower order learning activities (Biggs, 1999:25). It is emphasised that teaching and learning in clinical education should be aligned towards achieving the outcome of clinical competence.



2.2.2 Learning

Schunk (2004:2) defines learning as “an enduring change in behaviour, or the capacity to behave in a given fashion, which results from practice or other forms of experience”. According to this definition, learning involves developing new actions, or modifying existing ones. Learning also has to do with being able to demonstrate new or changed skills, knowledge, beliefs or behaviours. This definition also highlights the fact that learning can take place in a variety of ways.

What and how a student learns is influenced by many factors. Some of these factors include the culture of learning at a learning organisation, the environment and climate of learning in the learning organisation, the student and student’s approaches to learning. The ways in which students process information will determine what, when and how they learn and what use they will make of the learning. The students’ thoughts, beliefs, attitudes and values play an important role. Another significant factor is the students’ approach to learning and their style of learning.

2.2.2.1 Approaches to learning

Research into learning has shown that students can use different approaches to learning. It could be seen as ideal if students use the most appropriate learning strategy to enable them to internalise and contextualise what they have learnt. In physiotherapy, this will not only improve the quality of students' learning experience, but also the quality of service delivery to their future clients. Entwistle (in Knight 1995:101) distinguishes between three different ways that students may learn (Table 2.2). Students may learn using the deep (transforming) approach, the surface (reproducing) approach or the strategic (organising) approach to learning. Every student is capable of any of these types of learning, as approaches to learning refer to how students relate to what they are learning. Which approach the students use, is determined by the task at hand, the learning environment, the teaching process and the assessment process. The challenge to teachers is to design teaching, learning and assessment activities to engage students to facilitate deep learning.

Table 2.2: Different approaches to learning

<p>DEEP APPROACH <i>Intention – to understand ideas for yourself</i> <u>The student</u> aims to give ideas personal meaning; transforms incoming information in relation to prior knowledge and experience; looks for patterns and underlying principles; checks evidence and relates it to conclusions; examines logic and argument cautiously and critically; and is an active agent in the learning process.</p>	<p><i>Transforming</i></p>
<p>STRATEGIC APPROACH <i>Intention – to achieve the highest possible grades</i> <u>The student</u> learns by reflective organisation; puts consistent effort into studying; finds the right conditions and materials for studying; manages time and effort effectively; is alert to assessment requirements and criteria; and fosters a deep approach with alertness to assessment requirements.</p>	<p><i>Organising</i></p>
<p>SURFACE LEARNING <i>Intention – to cope with course requirements</i> <u>The student</u> uses memorising to reproduce knowledge in ways acceptable to the teacher; studies without reflecting on purpose or strategy; treats the course as unrelated bits of knowledge; finds it difficult to make sense of new ideas; feels undue pressure and worry about work; and is a passive agent in the learning process.</p>	<p><i>Reproducing</i></p>

(Source: Entwistle in Knight, 1995:101)

According to Pickworth (2001:140), one can maximise deep learning by appropriate course design, teaching methods and assessment. He identifies key elements of fostering a deep approach to learning as a high level of student activity, interaction with others, a well structured knowledge base and relevant assessment. In trying to facilitate deep learning, the teacher should thus not try to change the students, but rather the experiences, perceptions and conceptions of what they are learning (Ramsden, 2003:45).

2.2.2.2 Learning theories

Several theories exist on the process of learning. In the following section various theories of learning will be described, to explain how learning could occur.

(i) Learning as a social process

Various theories of learning, rooted in the constructivist approach to learning, advocate collaborative learning as a factor in learning. There are many ways in which learning are said to be social. Jarvis, Holford & Griffin (2003:42) considers social learning as the social relations of learning, the social purposes of learning and the social construction of learning. The following discussion will focus on the latter aspect.

Lev Vygotsky, in his cognitive development theory, explains learning and development through the processes of socialisation and internalisation. He sees contact with other people in the environment as important for development (Jarvis *et al.*, 2003:36-37). Vygotsky proposed that every learner has a potential ability for learning/development which he calls the Zone of Proximal Development (ZDP). The ZDP emphasises learning by socialisation, as it asserts that what learners can do with assistance is more indicative of their mental capacity than what learners can do on their own. Vygotsky defines the ZDP as “the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable others” (Jarvis *et al.*, 2003:37). The learners’ learning potential is thus realised when they interact with more knowledgeable others (Bitzer in Gravett & Geysler, 2004:47). Vygotsky’s theory emphasises potential, rather than development and collaborative learning, rather than independent learning. An implication of this theory could be that if a learner in higher education is assisted on a regular basis, a prediction of that learner’s future development may be made. However, Schunk (2004:299) states that if this assistance is withdrawn without the learner having achieved a stage of maturity of learning, this prediction may not

be true. Jarvis *et al.* (2003:37) agrees, by stating that the learner needs support systems (which is termed scaffolding) in order to undertake tasks within the ZDP. The implication for clinical education is that assistance should be provided until the student has reached maturity in learning, otherwise assistance will be unsuccessful.

The social cognitive theory of Bandura (in Schunk, 2004:84) also emphasises that much human learning occurs in a social environment. By observing others, he states, people acquire knowledge, rules, skills, strategies, beliefs and attitudes. Observation of and interaction with the clinical teacher may thus have an influence of the learning process of the student. Bandura (in Schunk, 2004:298) also introduced the principle of *scaffolding*, where the teacher initially models a skill, provides support and then gradually decreases support as learners develop the skill. Jarvis *et al.* (2003:50) also emphasised the influence that the social context has on motivation. He states that motivation to learn arises (or falls) in a social context of mutual expectation by teachers and learners. An individual's expectations influence how they behave and the outcomes of their behaviour changes their expectations (Bandura, 1977 in Jarvis *et al.*, 2003:50)

Piaget, in his cognitive development theory, also acknowledges the social environment for learning, as he states that cognitive development depends on four factors: biological maturation, experience with the physical environment, experience with the social environment and equilibration (Schunk, 2004:447). Piaget also advocates active and social learning: keeping students active will allow rich environments for active exploration and hands-on activities for active construction of knowledge. He sees social interaction as a source for cognitive development (Schunk, 2004:447).

(ii) Learning as a product of the environment

The behavioural theorists regard learning as a change that occurs primarily as a function of the environment. They emphasise the formation of associations between stimuli and responses through selective reinforcement of correct responding and how the individuals' behaviour is adapted due to experience. Behavioural theories suggest that the teacher should structure the environment in such a way that the students can respond appropriately to stimuli. Linking this to student-centredness, it means that the teacher should assess the needs and desired outcomes of the learners, and adjust the teaching environment and assessment appropriately, thereby focusing on the learner.

According to Schunk (2004:70), the behaviourist Skinner believes that teaching requires proper arranging of reinforcement contingencies. Skinner's view is that teaching is more effective when teachers present material in small steps, learners actively respond rather than passively listen, teachers give feedback immediately after learner responses, and learners move through material at their own pace. He also advocates that the teacher should specify the learners' present knowledge, and the desired outcomes of what the learner should be able to do. This means that individual differences are taken into account. Ideally, learners should work at their own pace, and instruction should be aimed at meeting the students at their different points of learning. The latter concurs with Bandura's principle (in Schunk, 2004:298) of scaffolding as a way for teachers to structure the learning environment (as discussed in the previous section).

Piaget's cognitive development theory (Troskie-De Bruin, 2005a:4) focused on the biological maturation of an individual, thereby focusing attention on the internal structures of development within the individual (nature). He also focused on the individual's interaction with the environment (nurture), thus the importance of learning through experience with the environment. An important point of his theory is that the environment influences the individual by challenging the individual's mental structures. Thus new mental structures are construed or existing ones are adapted. The environment and the teacher need to provide these challenges for learning.



Two points from the above learning theories should thus be taken into consideration for clinical education. The present developmental status of the individual student needs to be taken into consideration, and learning activities should thus be planned accordingly. However, care should still be taken that the student will achieve the outcomes set. The second consideration links with the first in that the learning of the student should be challenged but still be on a level that the student can handle effectively. Conflict creation for learning should thus be at an appropriate level.

(iii) Learning through observation

The social cognitive theory of Bandura (1986 in Schunk, 2004:84) found that people could learn actions by merely observing others performing the actions. Modelling is a critical component in this theory. Modelling refers not only to behavioural changes but also to cognitive and affective changes as a result of observing one or more models. His study results imply that people can learn by observing others and then imitating the behaviour.

This theory stresses that much human learning occurs in a social environment. By observing others, people acquire knowledge, rules, skills, strategies, beliefs and attitudes. Learning can thus occur via vicarious learning (learning by observing models perform). In the learning event the teacher is the role-model. Clinical teachers should thus be appropriate role-models as skills, behaviours, prejudices, interest and mannerisms might be acquired through modelling.

(iv) Learning by doing

Learning by observation might not be enough. Observing models does not guarantee that learning will occur. Students could need to practice (imitate) what they have observed. This type of learning is enactive learning (learning by doing). Learning seems to follow process of observing, then rehearsing, then acting (Schunk, 2004:100).

In physiotherapy, the learning of motor skills (or specific physiotherapeutic techniques) is important. According to this learning theory, students first observe models explain and demonstrate skills, then practise these skills. When observing, students may miss some of the components of a complex skill. Therefore, when the students practise the skill, it also gives the teacher the opportunity to provide corrective feedback, helping learners to develop their skill. The social cognitive theory postulates that “motor skill learning involves constructing a mental model that provides the conceptual representation of the skill for response production and serves as the standard for correcting responses subsequent to receiving feedback” (Bandura, 1986 in Schunk, 2004:97). In terms of the social cognitive theory, complex skills such as motor skills should be taught through both action and observation. Therefore, after observing the teacher as model, learners form this conceptual framework by transforming sequences of behaviours into visual and symbolic codes. They rehearse these codes cognitively. Individuals may therefore have a mental model of a skill before they attempt to perform it. However, these mental models require feedback and correction to be perfected.

(v) Learning through reflection

Mezirow's transformative learning theory is grounded in the constructivist approach and is primarily an adult learning/emancipatory learning theory (Kappel & Daley, 2004:83). The process of transformative learning involves the ability to reflect critically on experiences, integrating this knowledge into existing knowledge structures and taking action on these insights. The main focus of this is meaning and the transformation of meaning

perspectives (Jarvis *et al.*, 2003:39). Transformative learning involves questioning and revising one's assumptions and beliefs, thus these revised assumptions and beliefs influence one's future actions. Mezirow (1991) in Merriam (2004:62) differentiates between three types of reflection:

- Content reflection (thinking about the actual experience);
- Process reflection (thinking how to handle the experience); and
- Premise reflection (examining long held, socially constructed assumptions, beliefs and values about the experience or problem).

Premise reflection can lead to transformational learning. It involves critical reflection on assumptions with regard to the self (narrative), our cultural systems (systemic), our workplace (organisational) our ethical decision making (moral-ethical), or our feelings and dispositions (therapeutic). Transformative learning results in meaning schemes being transformed, new schemes created and different perspectives gained on experience itself (Jarvis *et al.*, 2003:39)

The concept of meta-cognition is part of information processing theories. Meta-cognition refers to the individual's engagement in self-monitoring of his thought processes, while focusing on a specific task/goal (Troskie-De Bruin, 2005a:13). The information processing theories see learners as active seekers and processors of information (Schunk, 2004:136). Students thus select and attend to features in the environment, transform and rehearse information, relate new information to previously acquired knowledge and organise knowledge to make it meaningful (Mayer, 1996 in Schunk, 2004:137).

Students thus need to reflect to aid in the rehearsing and transformation of information. The principles of reflection are also needed in the clinical context due to its complex nature. Students are often confronted with ethical dilemmas in clinical education. The teacher should thus facilitate premise reflection in these cases, not only for learning purposes, but also for the purpose of debriefing the student.

(vi) Experiential learning

Kolb (1984) developed a theory of experiential learning, which deals with learning style, but also with basic questions of learning and development (Jarvis *et al.*, 2003:57; Claxton & Murrell, 1987:25). The basic doctrine of experiential learning is summarised as: experience is the foundation and stimulus for learning, learners actively construct their own experience, learning is holistic, learning is socially and culturally constructed and learning

is influenced by the socio-economic culture in which it occurs (Miller & Boud, 1996 in Jarvis et al., 2003:56). The clinical learning experience includes all elements as described above and can thus be typified as experiential learning. Kolb describes learning as a four-step cyclical process as outlined in Figure 2.1 below:

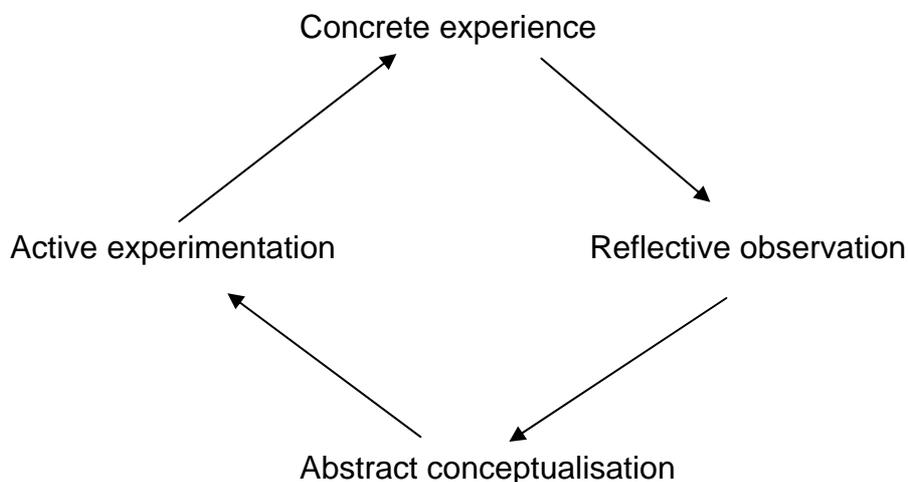


Figure 2.1: Kolb's four-step cyclical process of learning (Anderson & Adams, 1992:19)

Concrete experience is seen as the direct involvement of the student, while in reflective observation the student reflects on the experience from different perspectives. In abstract conceptualisation the students create generalisations/principles which they then test in a new, more complex situation (active experimentation). This process is not only cyclical, but it also represents fundamental elements of how one can learn, namely, the way in which one grasps information and furthermore the way in which one processes and transforms the experience (Claxton & Murrell, 1987:26). Smith & Kolb (1986) in Anderson & Adams (1992:27), summarise the preferred learning situations for each of the above styles of learning, which are described below.

Students, who learn through concrete experience, learn by intuition and from specific experiences. They relate and are sensitive to people and their feelings. They learn best from new experiences, as well as from peer feedback and discussion. They also prefer personalised counselling and view the teachers as coaches and helpers. Students who learn by reflective observation learn by perception. They observe carefully before making judgements and view things from different perspectives while also looking inward for meaning creation. Students with this style learn most from lectures and from observing

others, to see different perspectives. The teacher is seen as a guide or task master. If students learn through abstract conceptualisation, they learn by thinking. They plan learning and events systematically using a logical analysis of ideas. Deductive reasoning is used (acts on basis of own understanding of ideas). These students learn by theory readings, and study time. They present their ideas in a well-structured way and see the teacher as communicator of information. Students, who learn through active experimentation, learn by doing; they take risks and have the ability to get things done; they act to influence people and events. Such students learn through practice and receiving feedback. They enjoy small group discussions, projects and individualised learning activities. The teacher is their role model.

Why should teachers take cognisance of learning style? Teachers need to be tolerant and perceptive of different learning styles, especially with the new diverse face of higher education. This will aid in the planning of learning experiences to the benefit of most students. Teachers need to know how students learn to foster a change towards focusing on the intellectual basis for teaching rather than on the behavioural basis (McLeod, Steinert, Meagher & McLeod, 2003:641).

(vii) Constructivism

As a final word on learning, the researcher would like to elaborate on the concept of constructivism. In the constructivist view of learning, learning comprises of active construction of meaning and transforming understanding (Candy, 1991:251). This means that the student participates in the construction of reality, within a specific context. The student enters the learning event with certain prior experience and knowledge. This prior knowledge influences how the student will interpret reality and thus the learning experience. Candy (1991:270) also states that knowledge is tentative and socially constructed and that knowledge cannot be taught but only learnt. What is important in learning is how students interpret events and ideas and how they give meaning to these. This meaning making is personal and depends on the students' motivation and intention. It may, however, be influenced by certain conceptual changes taking place in teaching.

This leads to the next question on the learning context of health care students: What factors, relating to the practice of physiotherapy, have been found to influence learning? The next section will address this particular question.

2.3 THE CONTEXT OF CLINICAL EDUCATION IN PHYSIOTHERAPY

The context of physiotherapy education is described by Higgs (1993:241) as follows:

“Entry level physiotherapy curricula are vocational programs which have several key purposes. They aim to prepare students to become physiotherapists with responsibilities to their professions and to the community they serve, to be applied scientists in a context which values scientific evidence and justification, and to develop as skilled lifelong learners and innovators in a rapidly changing world.”

The clinical learning environment is identified by Strohschein *et al.* (2002:161) as the best area to facilitate such skills and attitudes, as students are already learning in the context of clinical practice. In clinical education students refine the knowledge, skills, values, attitudes and philosophies of the profession that they have learnt in the classroom or practical laboratories. Clinical education provides the situation, task and human complexities necessary to use prior learning. It also provides a context for new learning.

Several authors agree that clinical education is an essential element of health care educational programmes (including physiotherapy) (Stroschein *et al.*, 2002:161; Chan, 2001:448; Williams & Web, 1994:1; Higgs, 1993:243). Higgs (1993:241) states that it is in clinical practice that the students come to appreciate their role as health care providers with certain roles and responsibilities. She identifies the goals of clinical education as:

- the development of clinical competency (assessment skills, documentation skills, education skills and self-management skills);
- the development of self-knowledge and interpersonal skills (interaction with patients, families and colleagues);
- the development of clinical reasoning (problem solving, knowledge integration and decision making); and
- the development of self-directed learning (self-evaluation and the commitment to personal and professional growth).

Several changes have taken place in physiotherapy practice over the past decades (Cross, 1994:609). In contemporary practice, physiotherapists are first-line practitioners and self-governing providers of a professional service. Subsequently, clinical education in physiotherapy had to be changed in order to equip students accordingly. Clinical education thus takes on a whole new dimension. The role of the clinical teacher was

historically that of a clinical instructor, with an apprentice-type clinical training approach (Cross, 1994:609). The new role of the physiotherapist as clinical educator goes beyond mere supervision¹. The clinical teacher now becomes a facilitator² and manager of learning.

Taylor & Dean Care (1999:8) also explain why traditional apprenticeships, characterised by extended participation in practice, are no longer sufficient in the clinical education of nurses. Firstly, optimal use needs to be made of clinical placements due to the constraints that exist in the clinical education milieu, such as time students spend in the practice setting vs. classroom setting, as well as access to clinical teachers. Secondly, students are no longer required to learn just the observable procedures and behaviours that characterise nursing practice, but also the problem-solving, decision-making, clinical reasoning skills as well as the values and culture of the profession.

A cognitive apprenticeship model is thus advocated by Taylor & Dean Care (1999:8) to optimise time spent in clinical practice. The goal of the model is to develop explicit knowledge, psychomotor skills, critical thinking processes, processes of cognition and meta-cognition, and professional socialisation. Higgs (1993:243) also developed a teacher manager model, in which the teacher in health care education promotes self-directed and effective learning. In this model, the teacher has the role of manager of the learning environment, student participation in the learning task, group processes and individual student development. The teacher encourages students to work independently and interdependently, gradually taking responsibility for own learning.

Contemporary clinical teachers of physiotherapy should thus teach in line with their new role, by not only supervising and teaching students to perform techniques, but by facilitating clinical reasoning, whilst putting both the student and the patient at the centre of the learning/service providing process. The role includes creating rich learning environments, facilitating self-directed learning and lifelong learning amongst students and promoting the achievement of students' goals. This means that the clinical teacher needs to be aware of the processes of learning and the concepts of student-centred teaching,

¹ *Definitions of supervision focus around promoting professional development and ensuring patient safety, ensuring the appropriate level and amount of clinical duties, monitoring progress, feedback on performance, planning of continuing education and provision of career advice (Kilminster & Jolly, 2000:829).*

² *Hewson (2000:499) explains facilitation of learning as helping learners to reconcile their existing knowledge, attitudes and skills with the new being introduced.*

self-directed learning and adult learning. This new role implies that the clinical teacher should have a solid grounding in teaching and assessment skills.

The role of the clinical teacher is indeed multidimensional. Clinical teachers are expected to have a wide range of clinical knowledge, to know patients and the environments in which they practise. Clinical teachers must also have educational understanding, such as knowing the educational background of the students and the general principles of teaching, education and assessment. They also need the ability to draw on their clinical knowledge and convey it to students in an understandable way. Parsell & Bligh (2001:409) state that what separates the clinical teacher from the subject expert is the way subject knowledge is organised and selected for teaching and learning.

In the above discussion, the scene has been set for the context of physiotherapy clinical teaching and learning. In the next section, more specific attention will be paid to factors that influence teaching and learning in the clinical learning environment of physiotherapy. Where applicable, reference will also be made to clinical education in other health care sciences.



2.4 FACTORS INFLUENCING THE DELIVERY OF EFFECTIVE CLINICAL EDUCATION

Several factors that play a role in the clinical learning experience can be identified. These factors influence the learning environment and have been identified as the roles and attributes of the clinical teacher, teaching-learning activities used by the clinical teacher, the model of clinical education used, student assessment, the atmosphere, as well as facilities at and evaluation of the health care setting. Two aspects of the learning environment, namely clinical teacher roles and attributes and teaching-learning activities, have been found to be the most significant (Gandy in Shephard & Jensen, 1997:137). These factors form the focus of the current study and will be discussed in more detail. The role of the remaining factors will only be discussed briefly, and the concept of a learning environment will also be discussed.

2.4.1 The learning environment

Kilminster & Jolly (2000:830) state that the learning environment in which learning takes place profoundly affects what is learnt and the student responses to learning. What then is

a learning environment? In the literature there seems to be no distinction made between the learning environment and learning climate. Biggs (1999:65), for example, states that the learning climate refers to the quality of the relationship between the teacher and students, or within an institution. He identifies motivation, learning climate and teaching-learning activities as factors that may play a role in the establishment of an ideal learning context. Copeland & Hewson (2000:163) agree that the clinical teacher plays an important role in creating a good learning environment by being approachable, enthusiastic and creating a non-threatening atmosphere. Hewson (2000:499) elaborates on this aspect by stating that an appropriate learning climate is one that is risk free and safe, and in which the teacher is enthusiastic, respectful, open-minded and supportive of learning. Williams & Webb (1994:9) found that effective interpersonal style increased self-confidence, reduced anxiety and made the acquisition of knowledge and skills an easier task. Creating distrust, anxiety and cynicism amongst students is not a climate conducive to learning (Biggs, 1999:70). The personal qualities of the clinical teacher have a marked influence on learning and play an important role in maintaining a atmosphere that is conducive to learning.

2.4.2 Clinical teacher roles and attributes

The students' relationship with the clinical teacher plays an important part in the students' clinical experience and learning experience (Chan, 2001:455). The relationship between the clinical teacher and the students has been found to be a better predictor of client outcome than skill or helpfulness of the clinical teacher (Kilminster & Jolly, 2000:834). Higgs (1993:243) supports this notion by commenting that clinical teachers play a major role in ensuring entry-level competence. A successful clinical education programme is thus dependent on the clinical teachers. In her literature review Cross (1995:506) found that the clinical teacher remains the main focus in discussions on quality in clinical education. The emphasis in these discussions is on the skills and behaviours of clinical teachers. Her view is that the clinical teacher is pivotal in the achievement of success in learning outcomes of physiotherapy students.

Gandy in Shephard & Jensen (1997:134) identified seven key performance dimensions for a successful clinical teacher. These are professional skills, clinical competence (critical inquiry, problem-solving skills, reflective practice), communication skills, interpersonal skills in establishing relationships with patients, teaching skills (facilitating, organising, implementing and evaluating planned learned activities), observation skills (with timely

feedback, adjustments in learning experiences and development of reflective practice) and performance evaluation skills. She also notes that in several studies, students consistently ranked communication, interpersonal relations and teaching behaviours as the most valuable in the clinical learning process. However, the studies referred to are outdated (Emery, 1982; Farmer, 1988; Irby, 1978).

Hagler & McFarlane (1991) in Strohschein *et al.* (2002:169), also proposed the role of the clinical teacher as teacher (emphasis on the acquisition of new skills), coach (helping students take more control of their learning), mentor (looking for opportunities for the learner), counsellor (when problems begin to interfere with learning) and confronter (when decisive action needs to be taken).

Several other studies elaborated on the teacher as role model. Parsell & Bligh (2001:411) states that the example set by the clinical teacher is the most powerful way for students to acquire the values, attitudes and behaviour needed for practice. Taylor & Dean Care (1999:6) also identify modelling as one of the most useful teaching-learning activities. Harden & Crosby (2000:6) also found that students especially model the teachers they respect. Role modelling is seen as a powerful means of teaching values, attitudes and patterns of thought and behaviour in the social cognitive theory of Bandura (in Schunk, 2004:84). Harden & Crosby (2000:6) found teachers modelled enthusiasm, clinical reasoning, the doctor-patient relationship, holistic view of the patient, effective communication and active involvement in learning to students.

Higgs (1993:243) refers to research on clinical teacher attributes by Irby (1978) and Stritter, Hain & Grimes (1975). The latter studies found organisational skills, group teaching skills, enthusiasm, knowledge, clinical competence, and modelling of professional behaviours as well as applied problem solving, promotion of active student participation, student-centred teaching strategies, mentoring skills, a humanistic orientation and emphasis on research to be essential in clinical education.

In a more recent study, Onuoha (1994:208) used a one round Delphi study to identify clinical teaching behaviours which were perceived as most effective in facilitating learning. He designed a questionnaire using information from literature and by asking third- and fourth-year physiotherapy students to identify clinical teacher behaviours that contributed most to their learning in clinical education. Forty items were identified. Participants

(students, clinical teachers and academic teachers) had to rate each of the 40 items for importance on a five-point scale. The results of the study indicated that communication skills were seen to be the most important domain, followed by professional skills, interpersonal skills and lastly, teaching skills. There was no statistical difference between the mean ratings of these domains. The individual item that was rated the most important was 'carries out physiotherapy practice with competence'. It should, however, be noted that only six items were listed for communication skills, of which four centred on feedback, which could be regarded as a teaching skill. Nineteen items focused on teaching skills. A different picture could have emerged if all domains had had an equal number of items.

Cross (1995:509) conducted a survey to determine what physiotherapy students and teachers view as the attributes of an ideal clinical teacher. She created 12 descriptors of good clinical teachers based on literature as well as on reflections by students. Participants had to rank six of the 12 descriptors they considered most descriptive of a good clinical teacher. The top six descriptors were identified as approachability, good communication, knowledge, good role-modelling, enthusiasm and competency. Other items in the questionnaire included interest in the learning process, being well organised, concern about patient care, being in control, self-awareness and self-confidence.

Kilminster & Jolly (2000:834) reviewed the literature on clinical education of medical students, nurses, social workers and psychologists and compiled a list of factors and teaching behaviours conducive to learning in a learning environment. This list includes that clinical teachers need to be clinically competent and knowledgeable, have good teaching and interpersonal skills, give guidance on clinical work, linking theory and practice, being involved in joint problem solving, offering feedback, provide reassurance and being a good role model. Ineffective clinical teacher attributes were identified as rigidity, low empathy, failure to offer support, failure to follow concerns, not teaching, being indirect and intolerant, and emphasising evaluation and negative aspects.

In a combination qualitative and quantitative research approach, Chan (2001:449) used research on traditional classroom environment as a background to develop and validate a Clinical Learning Environment Inventory (CLEI) for nurses. The CLEI was used to assess nursing students' perceptions of the clinical learning environment. The inventory is comprised of five scales (see Table 2.3).

Table 2.3: The five scales of the Clinical Learning Environment Inventory

SCALE	DESCRIPTION AND SAMPLE QUESTIONS
1. Individualisation	The extent to which students make their own decisions. Are they treated according to their abilities? Do students prefer a strict or flexible system?
2. Involvement	Extent to which students actively participate in hospital activities
3. Innovation of teaching	Does the teacher plan new, interesting and productive ward and learning experiences? Is questioning on patient diagnosis and treatment used?
4. Personalisation	The emphasis on opportunities for individual learners to interact with the clinical teacher and concern for personal welfare. Respect, support, recognition, approachability, communication are highlighted.
5. Task orientation	Extent to which ward activities are clear and well organised.

(Source: Chan, 2001:450)

Personalisation (and thus clinical teacher attributes) was seen by the students as the most important domain of the clinical learning environment, followed by students involvement and task orientation. The least important domain for the students was innovation of teaching. The difference between the highest scoring and the lowest scoring domain, however, was minimal and thus not significant. The main findings of the study were:

- Students want to be recognised for their individuality.
- Students want to be treated with respect.
- Students prefer a flexible learning environment to a rigid system.
- Students were satisfied with the teaching strategies (these were not specified).
- Students value positive relations with the clinical teacher.
- Students value recognition for their contribution to patient care.

However, the population of the above study included only second-year nursing students with limited experience in clinical education. Owing to their limited experience, these students could have had low task maturity, and could therefore have been more dependent on the clinical teacher. This aspect might explain their high rating for personalisation. The study was also limited to the students' perspective and could have included clinical teachers' perspectives to provide a broad spectrum of ideas.

Williams & Webb (1994:1) investigated the role of clinical teachers in radiography. Following a literature review and interviews with students, it was concluded that the most important roles of the clinical teacher in the provision of clinical education included being a good role model, giving feedback, good evaluation and having good interpersonal skills. Interpersonal skills carried the most importance for students. A personal relationship with the clinical teacher who demonstrates empathy, encouragement and care, assisted learning far better than any other attribute. Clinical teachers who recognise students as team members and display the qualities of encouragement and support were seen as providing a learning atmosphere conducive to learning. The consequence of such a learning environment was rich personal growth. Motivation of students was enhanced if the teacher was approachable and interested in the student as a person. On the other hand, a clinical teacher who was seen as dominant and taking over procedures inhibited initiative and decreased motivation.

In summary, it is clear that clinical teachers need to be well prepared for their roles as teachers. This preparation relates not only to the roles of the clinical teacher as facilitator and manager of learning, but also to how personal and professional factors could influence the learning process. The teacher's approach to the student and the learning situation seems to play an important part in helping students to learn.

2.4.3 Teaching-learning activities used by clinical teachers

Not much literature could be found pertaining specifically to research into teaching-learning activities used in the clinical learning environment in physiotherapy and the efficacy thereof. Babyar, Rosen, Sliwinski, Krasilovsky, Holland & Lipovac (2003:227) state that reports of student perceptions about the efficacy of teaching tools used in physiotherapy clinical education are limited. Limited information is thus available on the effectiveness of various teaching methods used in clinical education of physiotherapy students.

In a survey done by Babyar *et al.* (2003:230), physiotherapy students ranked the following teaching-learning activities for clinical reasoning from most effective to least effective: discussion on actual patient case, discussion on actual patient in class, problem solving via hypothetical patient, problem solving via videotape of an actual patient, role playing with peers, case study assignments, brainstorming and review of a journal article. The students were also asked to identify their preferred method of learning clinical reasoning in

the clinical setting. Discussion of a patient case before and after interaction with the patient, was identified by 60,8% of the participants. However, the above study yielded a low response rate (22%) and did not consider the students' level of clinical experience which might influence their preferred teaching-learning activity.

The above study thus identifies that discussions on an actual patient seem to be useful to facilitate learning. Gross Davis (2001:63) regards discussions as useful because it actively involves the student. She argues that through discussion, students gain practice in thinking through problems, organising concepts, formulating arguments and counterarguments, evaluating the evidence for their own and others' position, and responding thoughtfully and critically to diverse points of view. A discussion is thus a collaborative learning event that provides the opportunity to acquire knowledge and insight through the exchange of ideas and opinions.

Clinical teaching-learning activities used by clinical teachers in physiotherapy were also investigated by Walker & Openshaw (1994:428). All clinical teachers respondents used demonstrations on patients and observation (with feedback) of learners as teaching tools. One-to-one tutorials and self-directed learning respectively, were used by 77% of the clinical teachers. Small group discussions were used by 73% and small group practice sessions by 64% of clinical teachers. Lectures and brainstorming were used by 27% of clinical teachers. However, the researchers selected these teaching-learning activities to be ranked by the participants, thereby limiting responses.

Radiography students, in a study conducted by Williams & Webb (1994:8), reported several teaching-learning activities as important to them. These included the teacher encouraging active participation in learning, the clinical teacher using her knowledge to help students understand experiences, the teacher teaching by comprehension and problem solving, and by relating theory to practice, and lastly, when the teacher has high expectations of the students.

Several other factors that are seen as central in the process of clinical education have been identified by Paschal (in Shephard & Jensen, 1997:181-182). These factors include bridging the gap between theory and practice, putting knowledge to work, professional socialisation, critical analysis of clinical competence (through role modelling and self-

assessment). Assisting the student to move from assisted to self directed learning has also been cited.

Reflection on experience may also be used to encourage learning. Higgs (1992:824) and Gandy (in Shephard & Jensen, 1997:134) view reflective practice as an important contributor to successful clinical teaching in the provision of student-centred teaching. Reflection has been defined by Brockbank & McGill (1998:65) in two ways: reflection as the “process or means by which an experience in the form of thought, feeling or action is brought into consideration, while it is happening or subsequently”, and as “the creation of meaning and conceptualisation from experience and the potentiality to look at things as other than they are”.

Experience alone does not facilitate learning, but reflection on experience and learning is necessary to enhance learning. Reflection should thus be planned as part of the experiential process, in this case the clinical encounter with the patient. Babyar *et al.* (2003:228) draw a comparison between the cyclic relationship of learning modes of Kolb (1984) (see Section 2.2.2.2) and the cyclical clinical reasoning used by the physiotherapy practitioner. The practitioner assesses and treats the patient (concrete experience), then observes the results of the intervention, reflecting on the results of the treatment (reflective observation). The practitioner may then think how and why an intervention is successful and how it can apply to other cases (abstract conceptualisation). Subsequently, the practitioner tries the intervention or modifies it to use on other patients (active experimentation). All four learning styles thus form part of what the physiotherapy clinician practices every day and should therefore be facilitated in the learning process. Babyar *et al.* (2003:228) recommend that all learning modes of Kolb should be developed in health care students in order to promote clinical reasoning (2003: 231). This notion is supported by Shephard & Jenson (1993:28). In so doing, the student can become flexible in acquiring and applying knowledge during clinical reasoning.

By making use of reflection, effective learning is not left to chance, but is intentionally facilitated and enhanced. Reflection can help to connect theory to practice and help students to engage in consistent and intentional self-evaluation and professional growth (Strohschein *et al.*, 2002:167). Reflection also equips students with skills needed for lifelong learning as will be discussed below.

Higgs (1992:822) avers that the student is a self-directed learner in the clinical setting. Self-directed learning and lifelong learning are important for physiotherapists as they need to contribute to the knowledge base of physiotherapy (for example, do research), and to demonstrate professional autonomy, competence and accountability (Hunt, Higgs, Adamson & Harris, 1998:3). It is also not possible to equip students with all the skills they will ever need, emphasising the need for reflection, self-assessment, self-directed learning and lifelong learning skills. Self-directed learners will be able to generate knowledge and skill to deal proactively and responsibly with their own learning needs and with the health care needs of society. According to Pintrich (1995:5), self-directed learning involves the active, goal-directed, self-control of behaviour, motivation and cognition for academic tasks by an individual student. Self-directed learning is described by Higgs (1992:825) as an approach to learning that is characterised by the following principles:

- The learner is responsible and aware of his own learning process and outcome.
- The learner is self-directed in performing learning activities and problem solving associated with the learning task.
- The learner gives active input regarding the learning task.
- Learning occurs with and through others.

This means that the student is in control of his/her own learning and can manage the process of learning. Higgs (1992:824), however, identifies a prerequisite for self-directed learning: students need to be mature enough to take responsibility for their learning. She calls this *learner task maturity*, which refers to the student's readiness to perform the specific task. The clinical teacher thus needs to diagnose the student's level of maturity and adjust the learning programme accordingly. If task maturity is low, the teacher should provide more structure to the facilitation of learning. If task maturity is higher, more freedom towards self-directed learning is allowed, thus the student is encouraged to take greater responsibility for learning.

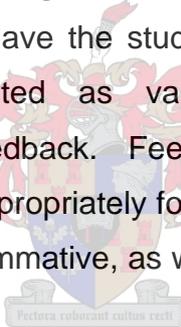
Feedback to students was also identified as an important variable in the efficacy of clinical education. Feedback left students feeling more confident and competent and it improved relationships. Feedback to students should be clear and unambiguous so that they are aware of their mistakes and weaknesses (Kilminster & Jolly, 2000: 830). Irby (1995:902) found that little feedback is given during patient case discussion. Rather, discussion focussed on patient management.

Various teaching-learning activities for the facilitation of learning in the clinical situation have been identified in the above discussion. There is a need to evaluate these teaching-learning activities in terms of the experience of learning from the point of view of teachers, and especially students, to determine the efficacy thereof.

2.4.4 Student assessment

Assessment plays a major role in the curriculum. Gibbs (in Brown & Glasner, 1999:41) state that assessment powerfully influences the way students responds to courses and behave as learners. It influences the quality of the students' learning experience and the quality of the teaching experience. Assessment strongly influences the value and credibility of what students are learning as the ability to transfer knowledge between classroom and clinical contexts (Higgs, 1993:243).

SU emphasises outcomes-based assessment and learner-centred assessment (Assessment Policy, 2004:6). Adopting a student-centred approach implies that the assessment of programmes should have the student as the main concern. Criteria for effective assessment are highlighted as validity, reliability, academic honesty, transparency, fairness and timely feedback. Feedback should be given soon after the assessment and be communicated appropriately for best effect. Assessment is a powerful tool in learning, and it should have summative, as well as formative functions (Assessment Policy, 2004:2).



Summative assessment is a formal and mandatory process. It is usually carried out at the end of the learning experience, but can be a continuous process. Such assessment is done to give a summary of the knowledge, skills, attitudes and competencies the student has acquired in the learning experience. The purpose of summative assessment is to determine if the student meets with the assessment criteria, if the student can be promoted to the next level. With summative assessment, the learner is awarded grades or credits that are reported and documented (Rolfe & McPherson, 1995:837).

The primary goal of formative assessment, on the other hand, is to enhance learning. It is a process of helping students to develop under conditions that are non-judgmental and non-threatening (Rolfe & McPherson, 1995:837; Geyser in Gravett and Geyser, 2004:93). This type of learning encourages the student; it promotes self-evaluation skills and is useful to improve the quality of teaching. It can encourage a deep approach to learning.

Formative assessment can take place during any stage of the learning process. The student is rewarded with valuable feedback. Depending on the type of formative assessment, the teacher is also rewarded with feedback regarding the students' learning experience, as well as the teaching process and the course itself.

In the module Clinical Physiotherapy clinical competency as a main learning outcome is assessed by means of a clinical competency test at the end of the each clinical placement. For fourth year students, the total summative assessment for the clinical module comprise of the clinical competency test (75%), clinical portfolios (15%) and clinical reports (10%). For third year students, the total summative assessment comprise of the clinical competency test (65%), clinical portfolios (20%) and clinical reports (15%), (Guidelines for Clinical Physiotherapy, SU, 2005:4). No formalised formative assessment is currently performed in the clinical education programme. However, assessment methods used for formative assessment need not be different from summative assessment. The difference is in what is done with the assessment results. Formative assessment in physiotherapy clinical education could include simulated clinical competency tests, technique tests, peer assessment, self-assessment, assessments completed by patients and specific learning tasks.

Self-assessment involves the ability to critically assess one's work against certain criteria or standards (Brew in Brown & Glasner, 1999:159). Self-assessment and reflection are often thought to be the same as both focuses on learning and experience. Brew (in Brown and Glasner, 1999:160) however states that all self-assessment involves reflection, but not all reflection leads to self-assessment. Self-reflection is a more exploratory activity, while self-assessment has specific aspects of achievement. She states that students need systematic practice in judging their own work, and needs feedback to develop their self assessment skills.

In peer assessment, students make judgements about and comments on each other's work (Brew in Brown & Glasner, 1999:160). Peer assessment may encourage thinking, increase learning and increase confidence of students. Peer assessment may contribute to cohesiveness of a student group, but may also disrupt the group, depending how the process is handled. However, Brew (in Brown & Glasner, 1999:163) emphasises the importance of self-assessment and peer assessment to develop skills of negotiation and discrimination.

2.4.5 The model of clinical education used

Several models of clinical education in physiotherapy have been described and discussed. Table 2.4 summarises common identified models and their benefits.

Table 2.4: Models of clinical education in physiotherapy and benefits of each model

MODEL	AUTHOR	BENEFITS
One clinical teacher to one student	Gandy in Shephard and Jensen (1997:148) and Higgs (1993:239)	Individual attention, greater control of learning experience. Time to build a relationship and assess students' strengths, weaknesses and learning style.
One clinical teacher to two students	Strohschein <i>et al.</i> , 2002:164	Fosters collaborative learning, teamwork and interdependence. Clinical teacher still able to control learning experience and give individual attention.
One clinical teacher to three students	Strohschein <i>et al.</i> , 2002:164 and Gandy in Shephard and Jensen, 1997:148	Fosters collaborative learning; however control over learning experience is less.
Multiple mentoring model: several clinical teachers to several students	Strohschein <i>et al.</i> , 2002:164 and Gandy in Shephard and Jensen, 1997:148	Catering for diverse needs as students. Diversity in role modelling, perspectives and support. Can focus on student needs and goals.
Interdisciplinary model	Strohschein <i>et al.</i> , 2002:164	Development of interdisciplinary teamwork. Fosters a client-centred approach.

Most models value collaborative learning and advocate that clinical education programme should be appropriate to the students' level of experience as well as the programme goals and design.

2.4.6 Organisation, facilities at the health care setting and evaluation of the health care setting

The organisation and design of the clinical education programme plays a role in the efficacy thereof (Higgs, 1993:242). Aspects of the programme should be adequately sequenced and linked. Programme goals need to be clear and transparent and adequate time needs to be allocated to clinical education programmes in order to meet the goals set. Material resources and facilities (such as space and equipment) also play a role in learning and service delivery. The venue of clinical education also needs to be safe in order to provide an atmosphere that is conducive to learning. Both the programme of clinical education and the health care setting need to be evaluated regularly to ascertain whether they fulfil their intended purpose. This kind of evaluation could provide valuable feedback

that could drive change. The aspects of organisation, facilities and evaluation fall beyond the scope of the current study.

2.5 SUMMARY OF THE CHAPTER

Following the literature study, the researcher categorised the factors identified as playing a role in the experience of learning in the clinical setting according to the model of Hesketh Bagnall, Buckley, Friedman, Goodall, Harden, Laidlaw, Leighton-Beck, McKinlay, Newton & Oughton (2001:558) as teaching-learning activities, approach to teaching-personal factors and professional role of the teacher. It is clear from the literature study that it is difficult to separate these factors from each other and that they are interconnected and interdependent. These aspects are summarised in Table 2.5 (with the brackets indicating the frequency with which the factor has been cited in the literature studied).



Table 2.5: Factors and behaviours conducive to clinical learning

Teaching-learning activities	
Appropriate levels of autonomy (5) High quality/ good clinical teaching skills (3) Active learning; promotes active student participation (2) Use of student-centred strategies (2) Facilitation of learning (2); facilitation skills Organising skills (2) Linking theory to practice (2) Variety of learning experiences Flexible learning structure Organisation Give direction on clinical work Negotiation and assertiveness skills Emphasis on research Constructive alignment Group teaching skills; collaborative learning	Appropriate feedback (4); prompt feedback (2); feedback on knowledge and competence Reflection on learning (3) Promotes self-assessment (2) Demonstrations (2) Patient discussions Observation – with feedback One-to-one tutorials Small group discussions Role playing Peer tutoring Lectures Brainstorming Clinical reasoning and problem solving Assessment skills Case assignments Journal review
Approach to teaching/Personal factors	
Communication (4) Approachable (3) Interpersonal skills (3) Preceptor attitude / mentoring skills (2) A humanistic orientation, concern for students A positive orientation towards teaching Caring, supportive Counselling and appraisal skills Reassurance	Enthusiasm (5) Open-minded Have high expectations form learners Communicates expectations Non-threatening/risk free atmosphere Recognises learner individuality Recognises learner contribution Gives constructive feedback
Professional role	
Clinical competence (5) (including critical inquiry, problem solving and reflective practice) Professional skills (2) Professional socialisation Role modelling of professional characteristics	Knowledge (3) Concerned with patient care Interest in the learning process Self aware In control Organisation/clarity of clinical education

Identifying what students see as most effective and important in teaching can be valuable in designing programmes for clinical education. It could assist in developing an educational model of clinical education, preparing clinical teachers for their role. Onuoha (1994:209) states that clinical teachers need to be sure of their role in clinical education. This clarity of role function for could facilitate self-confidence and job satisfaction.

In the next chapter (Chapter 3) the researcher shall explain how the study was performed to achieve its goals. The study design and methods will be explained and the development of the instrumentation from the literature will be discussed. This will be followed by a discussion on how the data was managed and statistically analysed.

CHAPTER THREE

MATERIALS AND METHODS

The main aim of the study was to investigate and explore views held by undergraduate physiotherapy students and their clinical teachers at Stellenbosch University (SU) regarding the current clinical education programme. In Chapter 1 the background and motivation for the study were provided. Chapter 2 reviewed literature on teaching, learning and clinical education. In this chapter the design and methodology for the study are described. The instruments used to generate data, as well as the research procedures followed, are described and discussed. Reasons are given for methodological choices made. The procedure followed for data management and statistical analysis are outlined. Consideration is also given to ethical aspects concerning the study. The chapter ends with some references to the limitations of the study.

3.1 STUDY DESIGN

A descriptive study was performed to achieve the aims of the study. The study was exploratory in nature and sought to investigate and describe views held by the indicated group.



The study may be typified as a case study as it focuses on one instance being investigated (Bell, 1993:8). A specific module (undergraduate clinical education) at an individual department (the Physiotherapy Department at SU) was investigated. According to Denscombe (1998:31), a case study occurs in a natural setting, which was the case with the current study. An artificial case was, therefore, not created. The researcher investigated students' and clinical teachers' views on the current clinical education programme. Carrying out research as a case study has several advantages. Denscombe (1998:31) states that a case study tends to be holistic, as it offers the opportunity to go into sufficient detail to unravel the complexities of a given situation. A case study also has depth, as the researcher is given the opportunity to discover aspects that have not yet been discovered. The strengths of case studies includes that it offers the opportunity to give explanations Denscombe (1998:31) and that it focuses on an instance to identify various interactive processes at work (Bell, 1993:8). Another advantage of a case study is that allows the researcher to use multiple sources and methods, which is useful in the

triangulation of results. This view appealed to the researcher, since the researcher wanted to focus on one aspect of the Physiotherapy programme in order to obtain an in-depth view by looking at different perspectives. However, it was taken into account that one of the disadvantages of a case study is that the findings of the study are not generalisable, as findings might be unique to a particular case.

3.2 RESEARCH APPROACH

The research approach was partly positivistic and partly interpretivistic, therefore the study generated quantitative as well as qualitative data. According to Van der Westhuizen in Henning (2001:25-26) it is important that the researcher identifies his/her theoretical framework/paradigm of research as it will influence how the research is planned and performed, thus influencing:

- the construction of knowledge regarding the philosophies of the given research;
- the way data are seen; and
- the way in which the meaning of the data is thought of.

The first part of the study took a positivist view, generating quantitative data. The positivistic framework is about finding the truth by empirical means. Positivists take the view that the aim of research is to uncover reality. The truth is "out there" and the researcher needs to use objective measures to uncover the truth (Muijs, 2004:4). According to the philosophy of positivism, the goal of knowledge is to describe in order to explain and predict phenomena (Van der Westhuizen in Henning, 2004:17).

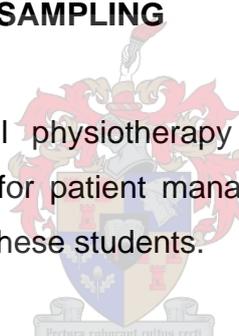
In the positivist part of the study, the aim was to determine which teaching-learning activities students and clinical teachers view as effective and which attributes of the clinical teacher are most important in the clinical education of physiotherapy students. These factors play an important role in the creation of an optimal learning environment for student-centred education. Participants had to allocate a numerical value to some of the questionnaire constructs. The current clinical education needs of the students and clinical teachers that may exist were investigated. The research also aimed to determine how many students/clinical teachers had these preferences, so as to determine the relative importance of these preferences for the sample as a whole. The study further aimed to explain why these preferences exist.

In aiming to explain the existence of preferences the researcher used an interpretivistic framework. The interpretivistic framework sees the researcher as being the co-creator of meaning. The role of human subjectivity is acknowledged in this framework. The researcher does not only describe the findings, but also interprets them. Reality is thus partly constructed by the researcher and his/her observations (Muijs, 2004:4). For the interpretivist, the goal of science is to uncover multiple realities.

The study has explored/investigated learning and teaching preferences and generated understanding of why these preferences exist from the point of view of current physiotherapy students and clinical teachers involved in the clinical education of these students. In doing so, multiple perspectives will be obtained (the perspective of the different students as well as of different clinical teachers).

3.3 STUDY POPULATION AND SAMPLING

The study population included all physiotherapy students at SU who had clinical experience in taking responsibility for patient management, as well as physiotherapists involved in the clinical education of these students.



3.3.1 Sampling

The sample for the first part of the study (a questionnaire) consisted of all enrolled physiotherapy students at the Physiotherapy Department at SU who had clinical experience in taking responsibility for patient management in 2005. All third- and fourth-year physiotherapy students at the Physiotherapy Department were invited to participate in the study. The sample for the clinical teachers consisted of clinical lecturers and some clinicians directly involved in the clinical education of the above-mentioned students. (Only those clinicians acting as contact persons for clinical education issues at the clinical area were recruited for the study.) Two clinical lecturers were excluded due to their involvement in developing the questionnaire.

For the second part of the study (the interviews) a random sample of third- and fourth-year students, as well as clinical teachers, were chosen. Randomisation was done using a computer programme (Excel).

3.3.2 Sample size

The sample size for the questionnaire included 80 learners (all 40 third-year and 40 fourth-year students), as well as 37 clinical teachers (23 clinical lecturers and 14 clinicians). Two clinical lecturers were excluded due to their involvement in the design of the questionnaire.

The sample size for the interviews included a random sample of 18 participants (six third-year students, six fourth-year students and six clinical teachers respectively). Should data saturation not be reached with six interviews, more interviewees would be recruited.

3.4 INSTRUMENTATION

Two instruments were used to generate data. Firstly, participants had to complete a questionnaire and secondly, a sample of participants took part in individual, semi-structured interviews.

3.4.1 The questionnaire

The researcher decided to use a questionnaire as a data-gathering instrument for the following reasons:

- There were many possible respondents.
- The information required was relatively straightforward as it focused on opinions and preferences.
- The respondents could complete the questionnaire in their own time.
- Bias on the part of the researcher was limited as the influence of interpersonal factors was limited.
- It is relatively easy to guarantee confidentiality with a questionnaire.
- The questionnaire may elicit more honest responses as it is completed individually.
- Cost effectiveness in terms of time and financial resources was favourable.

A literature study was conducted, aiming to find a questionnaire that could address the research question. As no such questionnaire could be found in the literature, a questionnaire was designed by the researcher, with the focus on the elements of student-centred learning, applicable in the clinical context. Following the literature study, two questionnaires were developed, one for the students and one for the clinical teachers respectively. The main questions in the questionnaire were the same for both groups.

Minor differences existed between the two questionnaires. The mode of address differed, since questions were directed at the students in the one case and at the clinical teachers in the other. The questions in the general section as well as those on clinical education differed. (See Appendix A for the questionnaire for the students and Appendix B for the questionnaire for the clinical teachers.) The questionnaire consisted of three parts.

In Part A, questions 1-4, participants had to choose from the given options the factors they viewed as most efficient in learning production. The first two questions focused on the clinical teacher in the learning environment, requiring participants to choose the most important role and attributes of the clinical teacher. Questions 3-4 focused on teaching methods. Participants had to choose six teaching-learning activities and strategies they viewed as most efficient for learning. Although options were given, the category "other" was created to allow freedom of responses. The aim of this part of the questionnaire was to determine the most important factors in each of the categories given. The importance of these factors in establishing an optimal learning climate was identified in the literature (see Chapter 2). Furthermore, a limit of six choices was required for questions 1-4. This was done to limit the possibility that all questionnaire items could be marked as most effective/important. If this occurred, it would not have been possible to answer the question of relative importance of the questionnaire items. The factor with the most votes would be seen as most important for the participants at their current level of experience.

Questions 5-7 required answers regarding participant preferences on collaborative learning, while questions 8-15 asked questions regarding preferred clinical structure and general information of the participant. This was done to obtain background information on the participants. In the last question in Part A, participants had to indicate their clinical education needs, if any. Options were given, but freedom of response was also possible.

In Part B of the questionnaire the participants were asked to rank different teaching-learning activities on a five-point scale in terms of learning production. Different teaching-learning activities were thus broken down for finer analysis of perceived efficacy in learning. It was decided to focus more on teaching-learning activities as little research had been done of the efficacy of these. (As indicated in Chapter 1, extensive literature has been produced on the roles and attributes of the clinical teacher and it was included in this study to obtain a holistic view.) The themes in teaching-learning for further investigation

as identified through the literature review and knowledge of the current clinical education programme were identified as:

- patient-centred activities;
- different types of discussion;
- different types of feedback;
- various methods of assessment;
- the specified clinical tasks completed on various clinical rotations; and
- a section of other factors not included in any of the above.

The questionnaire thus consisted of nominal data and ordinal data of open and closed questions. It is acknowledged that due to the nature of the closed questions, there was less scope for participants to supply their own answers or ideas. Only the researcher's identified options were given. However, in some questions the participants had the option to indicate their own view. Some participants were also given the opportunity to give their own ideas in the second data collection method (interview). The questions in the questionnaire were arranged in a meaningful way in order to make it easier for the participant to follow and understand. For this reason, the structure of the questionnaire was made as homogeneous as possible, with adequate spacing. Some definitions were also included in the questionnaire for better contextualisation. Each questionnaire was coded according to the group to which the participant belonged, namely third-year student, fourth-year student, clinical lecturer and clinician.

The questionnaires were developed in English. They were then translated into Afrikaans and then back to English by the researcher. Language experts of SU Language Centre were consulted to assess the language and user-friendliness of the questionnaire. An experienced statistician was consulted to determine if the questionnaire was suited for statistical analysis. The content validity of the questionnaire was assessed by experienced higher education practitioners (one professor and one senior researcher in higher education at SU as well as by the Physiotherapy Coordinator for Clinical Education and an experienced Physiotherapy clinical lecturer and Head of School for Allied Health Sciences at SU).

A disadvantage of the use of questionnaires is that a questionnaire lends itself to poor response rates. However, measures were taken to limit this problem. The questionnaire was designed to be user-friendly. Every questionnaire was accompanied by a covering

letter in which the aim of the study, the return date for the questionnaire and the contact information of the researcher were stated. A stamped, self-addressed return envelope was supplied with those questionnaires sent via the postal system. If the questionnaire was not returned by the suggested date, the researcher sent reminding letters. The questionnaire was followed up by the use of a semi-structured interview as a data generating method.

3.4.2 Semi-structured interviews

In the second part of the study, semi-structured interviews were used for data generation. According to Denscombe (1998:109), an interview is more than just conversation; it involves a set of assumptions and understandings which are not normally associated with a conversation. The aim of an interview is to produce material that will be used for research purposes. Therefore, data consists of the interviewee's words. In the interview, the interviewee's talking or words are seen as a genuine reflection of the person's thoughts (Denscombe, 1998:109). The content is thus taken at face value. For this reason Denscombe (1998:111-112) suggests that the interview should be collated with other methods of data generation, as a method to add more depth and detail. In this study, interview results were collated with results from the questionnaire. Denscombe (1998:113) states that semi-structured and unstructured interviews "lend themselves to in-depth investigations, particularly those which explore personal accounts of experiences and feelings".

In this study, the interview was chosen for data collection for the following reasons:

- To collect more detail from a small number of people as the researcher wanted more in-depth insight into the topic. The nature of the research was such that it required this kind of detailed information.
- Data gathered during the interview focused on experiences and feelings that needed to be explored.
- In this case it was reasonable to rely on a small number of informants, therefore a random sample was drawn.
- The researcher had direct access to one group of interviewees (students on campus).
- The researcher had reasonable access to the second group (clinical teachers in the clinical areas). The clinical areas were all situated in the Tygerberg area, which made it viable in terms of time and travel resources.

Semi-structured interviews were chosen as the researcher had identified certain topics to be investigated after analysis of the quantitative data (questionnaires) of the students. The researcher decided to use the questionnaire data of the students for two reasons. Firstly, the students were seen as the most important stakeholders in this study and secondly time constraints also played a role, as data was gathered during the last clinical rotation (to allow for maximal clinical experience of students). Interviews thus had to be completed within a specific time-frame for learners still to be on campus. The aim of the interviews was discovery of the experiences or views of the interviewees regarding these topics. The interviewees were given the opportunity to elaborate on topics in the questionnaire, explain their views and give reasons for their answers provided in the questionnaire. The topics covered in this part of the interview included the use of demonstrations, discussions, feedback and assessment. The researcher also asked questions on uncertainties, conflicting ideas and trends as identified in the data generated by the questionnaires. Questions in this regard focused on self-assessment, students' responsibility and the influence of the patient in the learning session. Questions clarifying the role of the clinical teacher were also asked. The questions used in the interviews were structured to give learners and clinical teachers the opportunity to explain their clinical experiences and give possible reasons for their learning and teaching environment preferences. The interview schedule is included as Appendix C.

One-to-one interviews were conducted due to the flexibility of this method and in order to generate ideas and opinions from one data source at a time. Bell (1993:91) regards the interview as adaptable, where the interviewer can follow up ideas and probe question. Giving the interviewee the opportunity to express his/her own opinion in a non-threatening, private environment was important. This aspect is viable for honest responses on positive and negative aspects which might be limited in a group interview. In a group interview there is a danger that only acceptable opinions are expressed while contrary opinions are not expressed, and that certain group members might dominate and overshadow other group members (Denscombe, 1998:114). One-to-one interviews also assured a high response rate as the meetings were scheduled at the interviewees' convenience.

People respond differently on how they perceive the interviewer, especially in terms of age, gender and ethnic origin. This could have an influence on building rapport and trust in the interview (Denscombe, 1998:116). The fact that the researcher was a clinical teacher and a staff member at the Physiotherapy department could have played a role.

Some students might have been influenced by this knowledge, not giving honest opinions about experiences that might have stemmed from their previous education experience with the researcher. On the other hand, students might also have tried to please the researcher by giving certain responses due to her dual role as clinical teacher and researcher. The researcher tried to limit this interviewer effect by creating an atmosphere of comfort and trust, emphasising that the researcher wanted to listen and learn from the interviewees.

Disadvantages of the interview include that consistency and objectivity are hard to achieve due to the impact of the researcher and the varying context of the situation. Data are thus unique to a specific person and context (Denscombe, 1998:137). The use of the digital voice recorder could also have hampered communication.

3.5 THE RESEARCH PROCEDURE

Permission to conduct the study was obtained from Physiotherapy departmental chairperson at SU. Following the finalisation of the questionnaires, a pilot study was performed to determine if the questions and instructions were clearly understood by the respondents. A sample from another academic Physiotherapy department at a university in the Western Cape was recruited for this purpose (ten third- and fourth-year students to enable a variety of responses). Through this the researcher could establish an estimate time for the completion of the questionnaire. The necessary changes to the instrument were made. These changes included shortening the questionnaire to improve user-friendliness as the completion of the questionnaire took longer than anticipated. The word order for some questions was also changed so that the questions would be better understood by the students.

The questionnaire was then administered to the students in the last clinical rotation in 2005 for the third- and fourth-year students respectively. At the beginning of the session, the researcher informed the students regarding the aim of the study. Written consent was requested from the participants, with the understanding that the participant could withdraw from the study at any stage. The researcher then handed out the questionnaire in the language of choice, accompanied by a covering letter (Appendix D) and informed consent

form (Appendix E). The students were free to complete the questionnaires at the session or in their own time, and return it by putting it in a box provided by the researcher at a central place in the Physiotherapy Department. Most students preferred to complete the questionnaire in the allocated time. A few handed in their completed questionnaires at a later stage. The completed questionnaire and informed consent form were handed in separately.

The questionnaire as well as a covering letter explaining the aim of the study and an informed consent form and requesting consent, was sent to clinical teachers via the postal system. The addresses and preferred communication language of clinical teachers were obtained from the clinical coordinator of the Physiotherapy Department at SU. A stamped return envelope was provided. A cut-off date for the return of the completed questionnaires was indicated in the covering letter. As some questionnaires were not returned by the proposed date, reminders to all clinical teachers were sent via the postal system. For the purposes of confidentiality, the researcher did not open the consent forms.

Following the completion and preliminary analysis of the completed questionnaires of learners, the researcher recruited the sample of students and clinical teachers for the interviews by telephone. An appointment was set up during the day, when students had time off or when clinical teachers had time available. The interviews for the students took place in a quiet office at the Physiotherapy Department at SU. For the interviews with the clinical teachers, the researcher travelled to clinical areas/practices to conduct interviews with the respective clinical teachers. One teacher preferred the interview to be conducted at the Physiotherapy Department. Written informed consent for the interview was requested and obtained prior to the interview. The interviews were recorded using a digital voice recorder. The researcher kept field-notes during and after the interview.

Figure 3.1 illustrates a summary of the procedure that was followed.

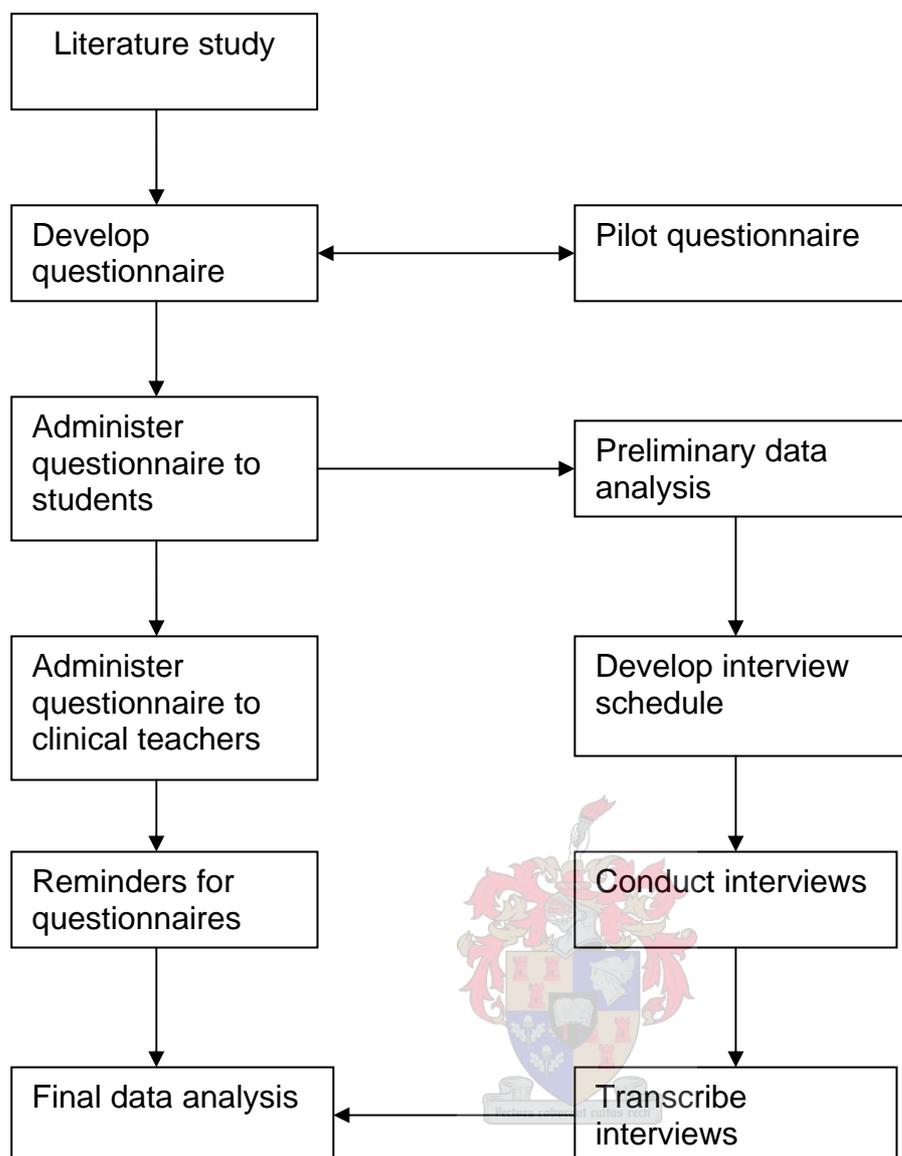


Figure 3.1: Research procedure

3.6 DATA MANAGEMENT AND STATISTICAL ANALYSIS

An experienced statistician was consulted on issues relating to data management and statistical analysis.

3.6.1 Analysis of quantitative data

The completed questionnaires were numbered, and the data of the questionnaire were captured using a data-capturing sheet on computer-aided software (Excel). For the analysis of the questionnaire data, descriptive measures like proportions, means, and

histograms were used. Data were then further analysed on a statistical programme (Statistica 7). The questionnaire data were analysed using descriptive measures (proportions, means and histograms).

3.6.2 Analysis of qualitative data

The recorded audio compact discs were transcribed for data analysis. A unique serial number was allocated to each of the data sets for reference purposes. Back-up copies were made of all interviews. The text was then analysed according to guidelines as given in Denscombe (1998:210-212). The text was broken down into units for analysis. These units were categorised according to words, ideas and events. The researcher then revisited field notes and texts, reflecting on categories. Themes and possible relationships were identified in terms of patterns, processes, commonalities and differences in data. The researcher then aimed to generate a set of generalisations that could explain the themes and relationships identified. These generalisations were finally compared to existing theories (Denscombe, 1998: 210-211).

At this point the researcher would like to acknowledge that analysis of quantitative data means deciding what meaning or implications the words have. The researcher therefore plays a significant role in the production and interpretation of qualitative data. Denscombe (1998:134) states that "it is good research practice to acknowledge the impact of the researcher's own identity and values in the analysis of the interview data". For the qualitative part of the study, the researcher thus became an integral part of the analysis.

3.7 ETHICAL CONSIDERATIONS

The protocol for the study was submitted to and approved by the Committee for Human Research at the Faculty of Health Sciences, SU and was carried out according to internationally accepted ethical standards and guidelines. Permission to perform the study as well as the pilot study was obtained from the respective departmental chairpersons of the Physiotherapy Departments involved.

The aim of the study was described and written informed consent was obtained and retained for the questionnaires as well as for the interviews in all cases. The participants understood that participation was voluntary and that they had the freedom to withdraw

from the study at any time. Data obtained were handled as confidential. Confidentiality of the participants was ensured by asking participants not to identify themselves while completing the questionnaire. The researcher kept the identity of the interviewees confidential and discreetly approached them for the interviews.

The results of the research will be disseminated to all stakeholders, including the higher education institution, the students, the clinical teachers, the health care centres and the physiotherapy profession. Some participants of the study suggested that the results of the study be posted on the Web page of the Physiotherapy Department, SU.

3.8 ASPECTS OF VALIDITY AND RELIABILITY

Henning (2001:146) refers to issues relating to reliability, validity and generalisation in research as the "scientific holy trinity", thereby emphasising that research should be trustworthy, credible, dependable and conformable to be truly worthwhile.

In determining reliability the question is asked whether the research instrument would generate the same results on other occasions (consistency) and whether the instrument is neutral in its effect (stable). Another question regarding reliability is whether the same results would be obtained and conclusions arrived at if someone else did the research (Denscombe, 1998:213; Troskie-De Bruin, 2005b:2). This reflects on accuracy. A reliable questionnaire can be seen as a questionnaire that elicits consistent responses. In the current study, the questionnaire was designed as a data-generating tool specifically for the study. The questionnaire measures opinion and it is expected that opinion might change over time. Test retest reliability was thus of lesser importance. Internal consistency reliability, however, was achieved by including similar questions in the questionnaire as checks (for example questions B 4.1 and B 6.7 in Appendix A).

For the qualitative part of the study, however, it is difficult to affirm to the above questions. The reason for this is the very nature of the qualitative inquiry performed. It has been acknowledged that the researcher is an integral part of the interview as research instrument and that interviewee responses may have been influenced by the researcher as person. Furthermore, no context and no individual can be considered the same (Denscombe, 1998:213). However, measures were taken to ensure the maximum amount of reliability by explicitly stating the process and decisions by which the research was

undertaken and developing an audit trail of the research and especially the interview schedule.

Validity of data entails whether data-generating tools actually measure what they are supposed to measure, i.e. if the research is scientifically sound and whether it was appropriately conducted (Denscombe, 1998:241; Troskie-de Bruin, 2005b:2).

A distinction is made between validity of research design and validity of the research instrument. Reliability of research design has to do with the external validity (the measure to which results can be generalised) and internal validity (taking independent variables into consideration). Although the current study has a low external validity for generalisability to other physiotherapy departments, the findings are useful for the case it investigated. The results are thus generalisable to the specific case as no sampling was used for the questionnaire and random sampling was used for the interviews. In this regard conclusions might be drawn between preferred practice as investigated in this study and actual practice as currently occurring. This aspect is important, as Henning (2001:151) emphasises that the findings of the study should be usable. Independent variables were taken into account (but not controlled) in this study (for example student motivation and clinical education constraints).

The validity of the research instrument has to do with face validity (do the items measure what they appear to measure?). This was assured by using appropriate methods and methodology. Content validity of the questionnaire was obtained by asking peers and experts to assess the questionnaire. Validity of data was also obtained by means of the pilot study using a similar group of students. Validity has also been described as competence and craftsmanship. Validity was ensured by the continual checking for bias, and justifying all procedures. Henning (2001:151) describes communication as validity. In this regard, the researcher continually checked data for accuracy during the interview.

Validity of data was also ensured by using triangulation. Data were thus triangulated through using various sources of data (students and clinical teachers) and various techniques of data generation (questionnaires and semi-structured interviews). Level triangulation was also used in a limited format (third-year students with fourth-year students). Different methods of inquiry and sources of information ensured data variety

(Denscombe, 1998:85). This author sees several advantages in using triangulation of data:

- Triangulation may improve the quality of the research.
- Triangulation increases the validity of data when data is seen from different perspectives, and data may be corroborated against each other.
- Triangulation helps one understand the topic in a more rounded and complete fashion, compared to using one method of data collection.

Different measures were therefore undertaken to ensure that data obtained, and thus the study, were valid. Measures were also taken to achieve reliability.

3.9 LIMITATIONS OF THE STUDY

As the study is a case study, the findings of the study may not be generalisable, as the findings might be unique to a particular case (Denscombe, 1998:39). It is thus acknowledged that the findings of this study might not be applicable to other Physiotherapy departments as the contexts and the individuals differ. The study could, however be used as a pilot study for a nationwide study in South Africa.

The influence of the researcher as clinical teacher could have been a limitation, as some participants might not have given honest opinions, especially during the interviews. It should also be acknowledged that the researcher is a novice to qualitative research and thus had limited experience in conducting interviews for this purpose. The researcher might not have been as adept at using probes and prompts when compared to an experienced researcher. For this reason the researcher chose to perform individual interviews as they are easier to handle (Denscombe, 1998:114). Nonetheless, it was as a learning experience for the researcher.

Most of the interviews were conducted in Afrikaans as it was the language of choice for the interviewees. The researcher thus had to translate the comments of the Afrikaans interviews and answers in the questionnaire for analysis and reporting. It would have been optimal if the translated comments were verified by another party not involved in the research.

The time-frame of the study provided a challenge for the researcher. The researcher chose to perform at a time that all students who participated in the study had clinical experience. This was optimal to obtain a variety of views, based on clinical experiences. It also meant that only the questionnaire results of the students could be followed up as the clinical teachers were slow in responding. After the analysis of the results (discussed in the following chapters) it became clear that the results of the clinical teachers' questionnaire would not have made a major difference in the construct of the interview items.

3.10 SUMMARY OF THE CHAPTER

Chapter 3 discussed the research design and methodology used in this study as well as the research instruments used to generate data to answer the research question. The researcher justified choices made in during the course of the research in order to provide an audit trail for the study. The results of the data generated are displayed in Chapter 4 (quantitative data) and Chapter 5 (qualitative data). Findings are discussed in Chapter 6.



CHAPTER FOUR

RESULTS AND DISCUSSION OF THE QUESTIONNAIRE

The results obtained from questionnaire are presented. Quantitative results and limited qualitative results from both the physiotherapy students and clinical teachers are displayed in this chapter. Where necessary, a distinction is made between the results of the third- and the fourth-year students. Tables and figures are used to display the data.

4.1 RESPONSE RATE

The response rate of the sample is illustrated in Table 4.1.

Table 4.1 Response rate of the sample

Students	88% (70/80)	Third year	95% (38/40)
		Fourth year	80% (32/40)
Teachers	62% (23/37)	Clinical lecturers	74% (17/23)
		Clinicians	43% (6/14)
TOTAL = 80% (93/117)			

4.2 GENERAL INFORMATION ON PARTICIPANTS

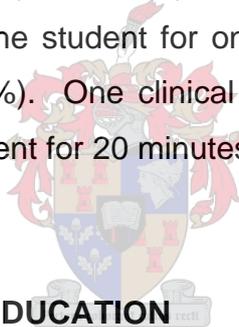
The student participants were mostly female (94%). The age range of the participants was between 20 and 30 years, the average age being 22 years. Thirty-seven percent (26) were 21 years old and 33% (23) were 22 years old.

All clinical teacher participants were female. They qualified as physiotherapists between 1974 and 1999, 22% (5) graduating in 1996. The clinical teachers had an average of 7.2 years of clinical teaching between them, with the least being one year and the most 22 years. Sixty-five percent (15) of the participants had training in clinical education.

4.3 PREFERRED CLINICAL STRUCTURE

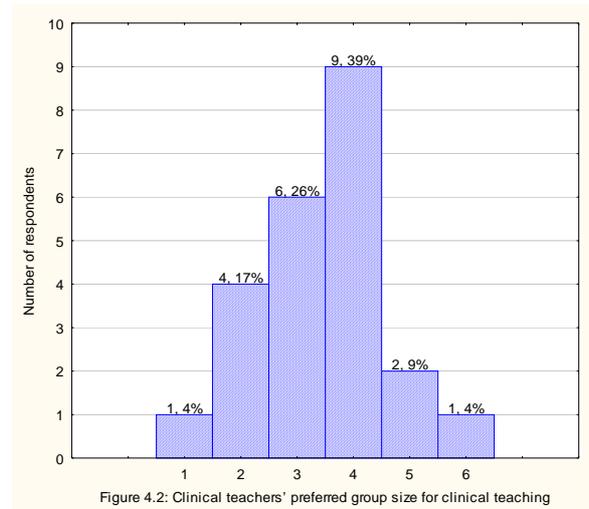
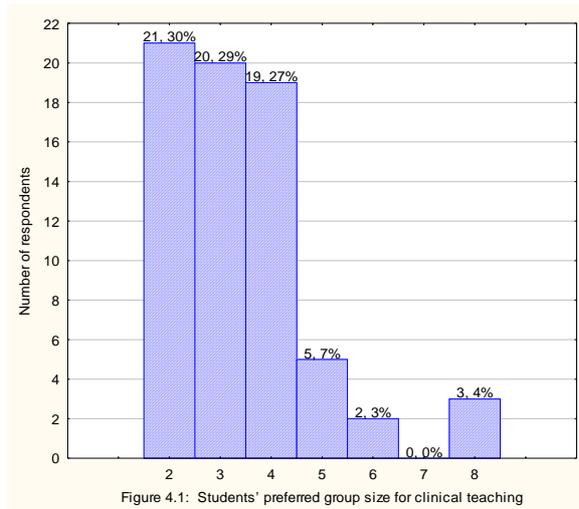
Students preferred a clinical placement to be five weeks (34 or 49%) or six weeks (28 or 41%) long. Most students preferred to perform service learning a full day on a clinical placement (42 or 61%). However, 65% (24) of the third-years preferred to work only in the mornings. Students would have liked an appointment with the clinical teacher twice per week (71%), spending one hour (46%) with them. Twenty percent of students (14) also suggested that the clinical teacher spend one and a half hours with them on a visit and 17% (12) suggested two hours.

Most clinical teacher participants preferred a clinical placement to be six weeks long (14 or 61%). Others preferred the placement to be five weeks (4 or 17%), seven weeks (2 or 9%) and eight weeks (3 or 13%). Sixty-one percent (14) of clinical teachers in this study preferred students to work full day. Most would have liked an appointment with the students twice per week (17 or 71%), while 4 (17%) preferred once per week. Clinical teacher participants prefer to visit the student for one hour (11 or 48%), one and a half hours (26 or 26%) or 2 hours (2;9%). One clinical teacher participant preferred to visit students daily on the clinical placement for 20 minutes.



4.4 GROUP WORK IN CLINICAL EDUCATION

Most student participants (58 or 83%) preferred clinical teaching in an individual (1:1) situation (81% of fourth-years and 84% of third-years, respectively). However, when group teaching was used, students preferred the group size to be between two and four learners per group (see Figure 4.1). Most clinical teachers, on the other hand, preferred clinical teaching in a group situation (13 or 57%). Their preferred group size is displayed in Figure 4.2.



Students and teachers were asked to give reasons for their preferred group size. Students' comments are summarised in Table 4.2, and teachers' comments are summarised in Table 4.3. Multiple comments were possible and some comments have been translated from Afrikaans.



Table 4.2: Student participants' reasons for preferred group size

Group size	Reason (number of similar comments)
2	<p>The teacher can give individual attention (8) Promotes participation of everybody in group (7) Variety of insights/opinions/questions/comments (5), not too many (2) Learn from each other (4) Comfortable atmosphere, less intimidating/unnerving (4) More organised (3) Less overwhelming for patient (2) You can compare your reasoning with that of other students (2)</p>
3	<p>Promotes participation of everybody in group (11) Variety of insights/opinions/questions/comments (8) The teacher can give individual attention (4) Comfortable atmosphere, less intimidating/unnerving (4) Helps to keep focus (4) Learn from each other (4) Not too many opinions, else confusing (2) More organised (1) You are not on your own (1)</p>
4	<p>Promotes participation of everybody in group (6) Variety of insights/opinions/questions/comments (6) The teacher can give individual attention (6) Promotes group interaction (3) Comfortable atmosphere (3) Easy for teacher to handle (3) More organised (2) Saves time (1) Not too many opinions (2)</p>
5	<p>Promotes participation of everybody in group (2) Variety of insights/opinions/questions/comments (2) Not too many opinions (2) The teacher can give individual attention (1)</p>
6	<p>Easy for teacher to handle (1) Promotes group interaction (1)</p>
8	<p>Promotes participation of everybody in group (2) Variety of insights/opinions/questions/comments (1) More organised (1) The teacher can give individual attention (1)</p>

Table 4.3: Clinical teacher participants' reasons for preferred group size

Group size	Reason (number of similar comments)
2	Students can participate (3) Can ascertain individuals' specific problems/individual attention (2) Saves time (2) Variety of opinions (1) Not practical to have big groups in the ward situation (2)
3	Comfortable atmosphere to promote participation (3) Not practical to have big groups in the ward situation (2) Students learn from each other (2) More focused (1) Saves time (1)
4	Promotes active participation (8) Saves time (2) Easy to handle (1) Sharing of knowledge and skills (1) Teacher can still give individual attention (1) More focused (1) Comfortable atmosphere (1)
5	Easy to handle (2) Promotes participation (2) Teacher can still give individual attention (1)
6	Promotes group interaction (1) Students does not feel intimidated (1)

Group teaching sessions was regarded as valuable in clinical education as can be seen in Table 4.2. However, students caution that although they appreciate a variety of opinions and insights during a group session, there should not be too many, since they could confuse participants. Furthermore, there may not be enough time to discuss salient points such as clinical reasoning and problem solving. Therefore, students suggest a small group (Figure 4.1) in order to maintain variety, yet limit the various insights. Students also value that each group member needs to participate actively and be involved in the learning. One of the students stated in the questionnaire: "When the group is bigger, it is easier to hide away or disappear in the group, and not to participate actively. If you only listen, you learn less than when you actively participate" (translated from Afrikaans).

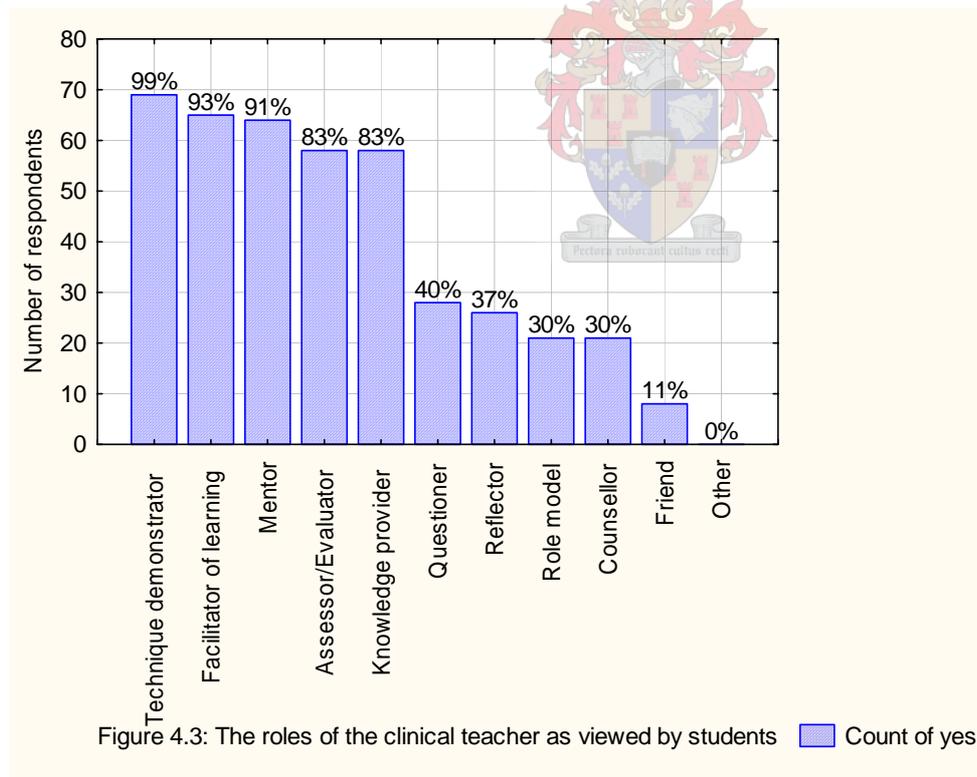
The atmosphere in the group learning situation seems to have been of utmost importance for some of the students. Students indicated that they were more inclined to participate within a comfortable learning environment, and the group learning situation was acknowledged as less intimidating and unnerving for some (Table 4.2).

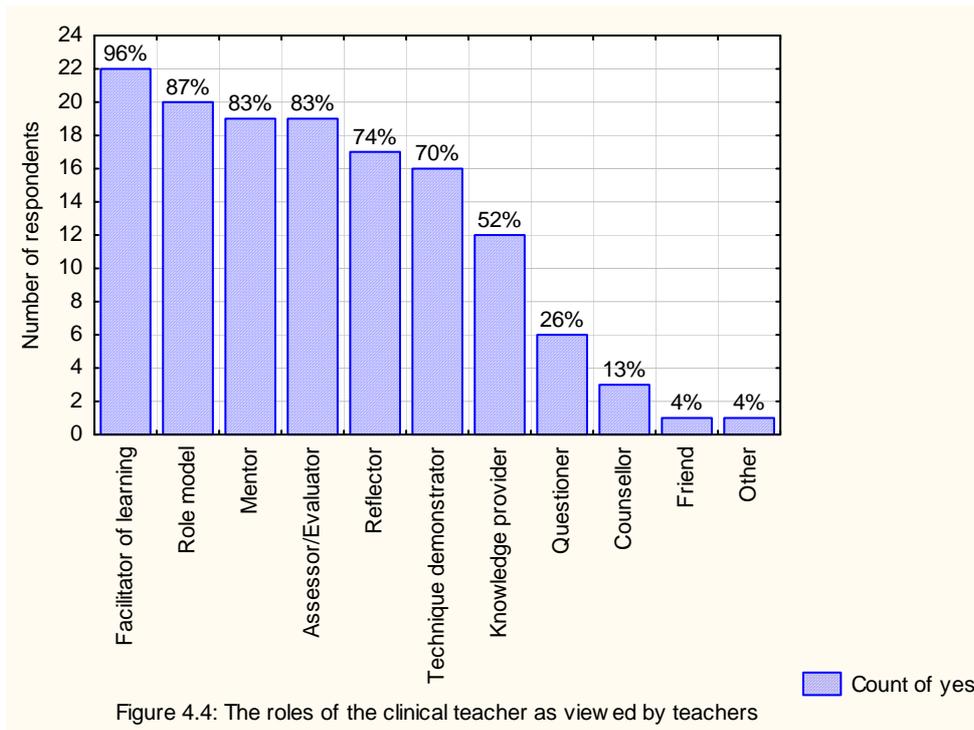
Clinical teachers shared the views and concerns of the students (Table 4.3). It was important for clinical teachers to be able to give individual attention to learners in the group in order to diagnose students' strengths and limitations, therefore clinical teachers preferred a small group size (see Figure 4.2). Clinical teachers also value the participation of all group members and the creation of a comfortable learning atmosphere in which students are able to participate freely. Another dimension was added by the teachers as they see group sessions as saving time. This comment might reiterate the issue of time constraints in clinical education.

4.5 THE CLINICAL TEACHER

4.5.1 Clinical teacher roles

Participants were asked to choose what they see as the most important roles of the clinical teacher. The results are illustrated in Figure 4.3 (students) and Figure 4.4 (clinical teachers).





From the results of the questionnaire, it is clear that the students and clinical teachers largely agreed on the role of the clinical teacher (Figures 4.3 and 4.4). Differences, however, existed in the role of the teacher as role model, knowledge provider and technique demonstrator. The confidence intervals for the above aspects do not overlap; therefore there appear to be significant differences (at 5%) in the views of students and teachers. (See confidence intervals in Appendix G.)

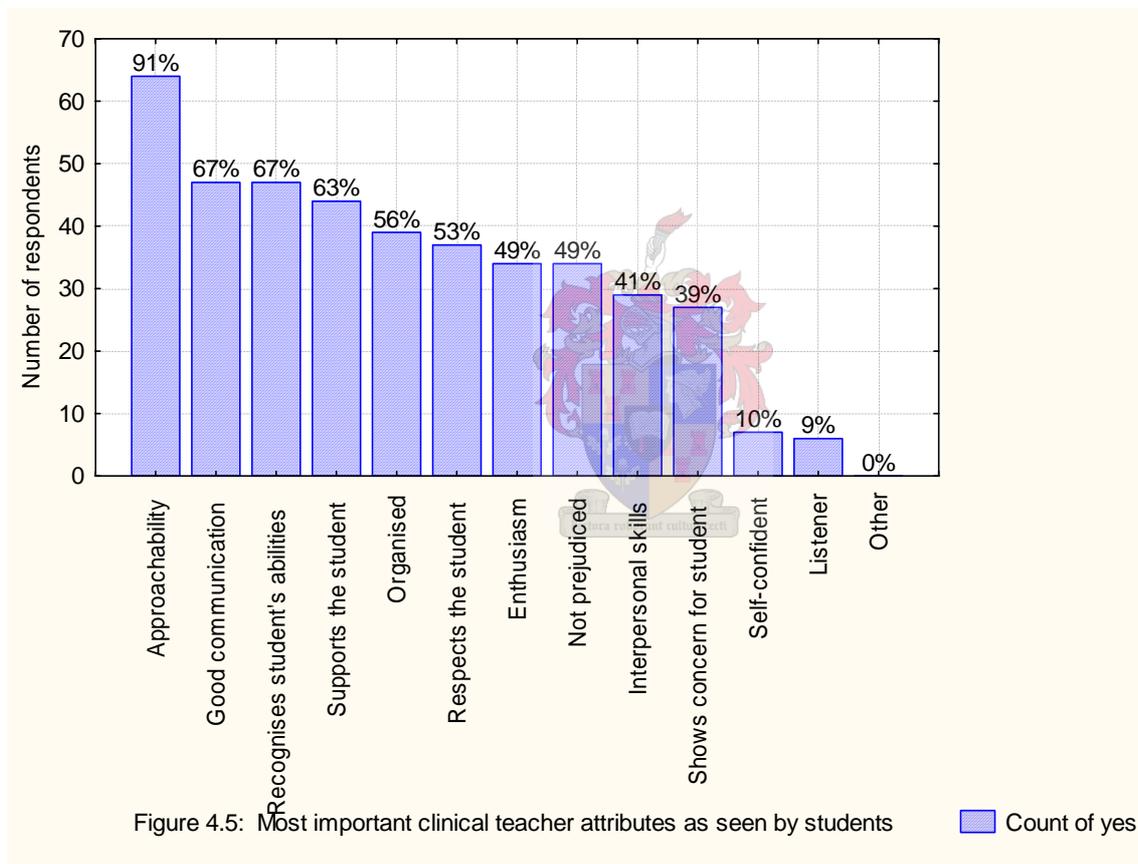
The difference in students' votes and clinical teacher votes for the teacher as a role model could be twofold. One could be that the students underestimated the powerful effect of the teacher as role model on their learning, and the other that the teacher as role model may have been seen as being incorporated in other roles of the teacher, such as providing demonstrations and mentorship.

The discrepancy in students' and clinical teachers' views on the role of the teacher as knowledge provider could be caused by the conflicting view of the teacher as the provider of information and knowledge, and yet at the same time the facilitator of learning. The reason for different views on the teacher as technique demonstrator could possibly be that students see the teacher as technique demonstrator to demonstrate adaptations to the technique specific to the patient and his/her medical condition. (This issue will be elaborated on in the next chapter.)

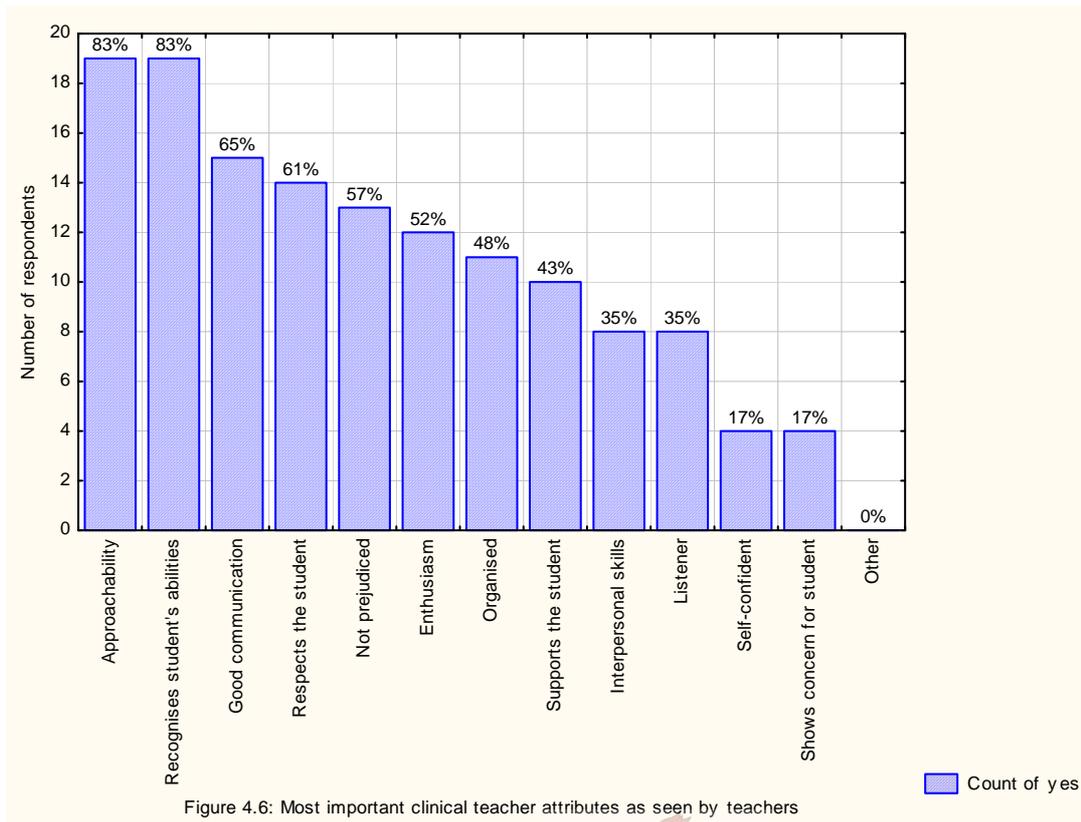
The clinical teacher's role as counsellor yielded a low response in both the students and clinical teachers. This could be attributed to the fact that counselling might only be necessary when problems arise and that it is therefore not needed in all cases. In the current study, it could be that neither the teachers nor the students experienced much need for counselling in this particular group of learners. Counselling was therefore not seen as important.

4.5.2 Clinical teacher attributes

Participants were also asked to choose what they regarded as the most important attributes of the clinical teacher necessary for optimal learning. Figure 4.5 illustrates the student responses and Figure 4.6 illustrates the teacher responses.



More third year students considered the construct *organised* as rated important (68%) if compared to the fourth year students (41%). Also, *not prejudiced* elicited a variety of responses, with obvious differences between fourth-year students (69%), third-year students (32%) and clinical teachers (57%) (Figure 4.6). Further investigation is needed to determine the differences in scoring between the participants.



The most important attribute of the clinical teacher for student participants and clinical teacher participants was approachability (Figures 4.5 and 4.6). As found in previous research studies, good communication with the teacher is seen as important. An interesting finding is the low rating both groups of participants assigned to the interpersonal skills of the teacher. A possible reason could be that the aspects of interpersonal skill deemed as important by the participants are encapsulated by other constructs such as good communication and approachability.

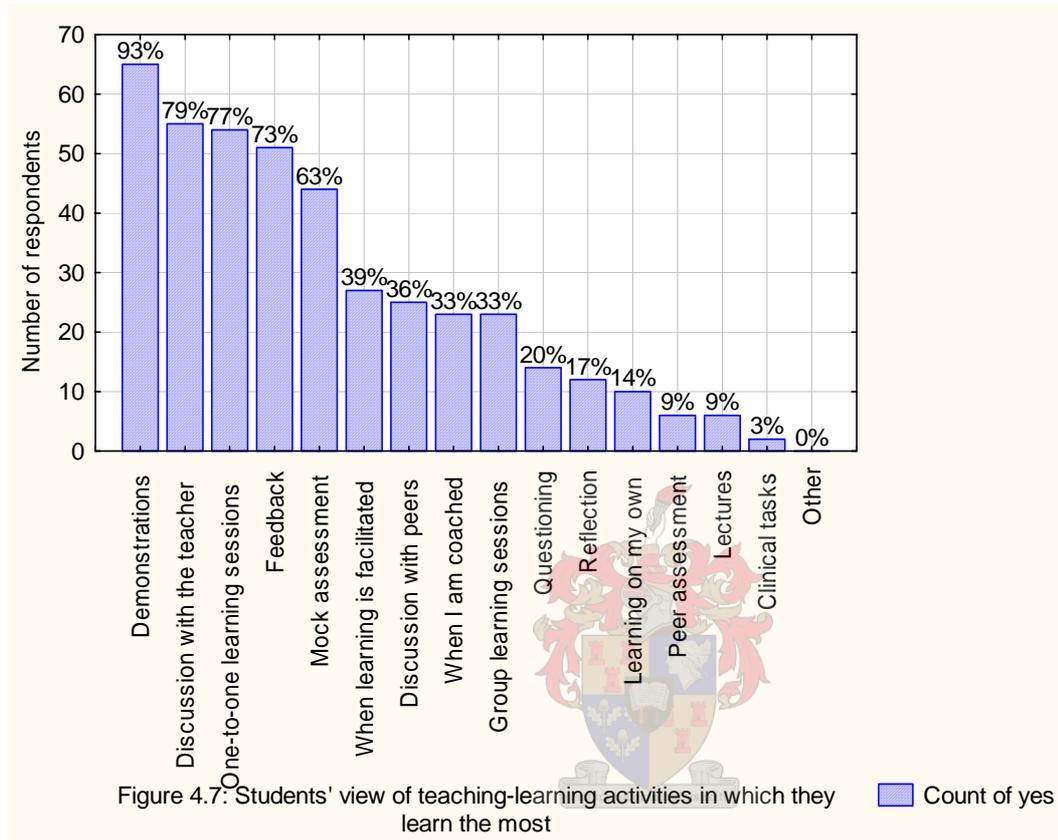
Another surprisingly low vote was for 'the clinical teacher as listener'. Again, listening could have been seen as part of communication skills.

It was interesting to note that with the third-year students an organised teacher received the second most-votes. This could give an indication of the third-year students' (as newcomers to the clinical milieu) need for structure in an environment where not much control of circumstances can be exerted.

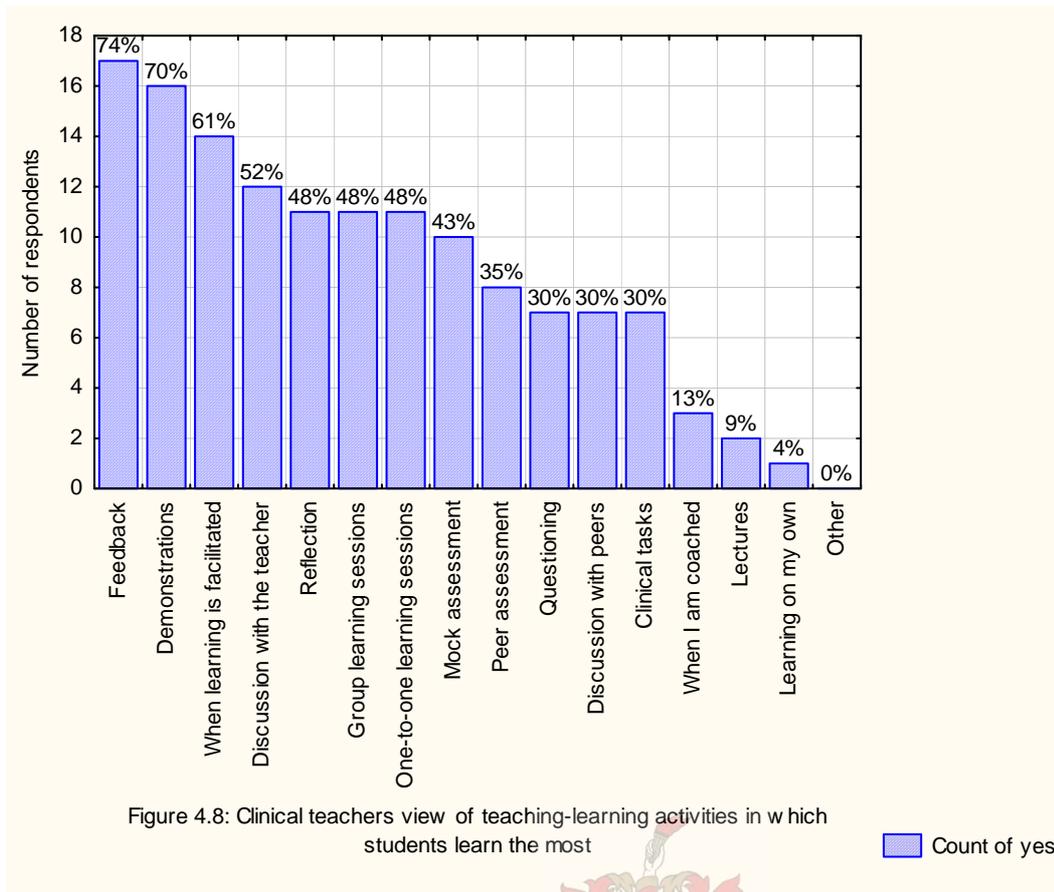
4.6 TEACHING AND LEARNING ACTIVITIES

4.6.1 Teaching-learning activities

Participants were asked to choose six teaching-learning activities they deemed most valuable in clinical learning. The results for students' responses are illustrated in Figure 4.7 and for teacher responses in Figure 4.8.

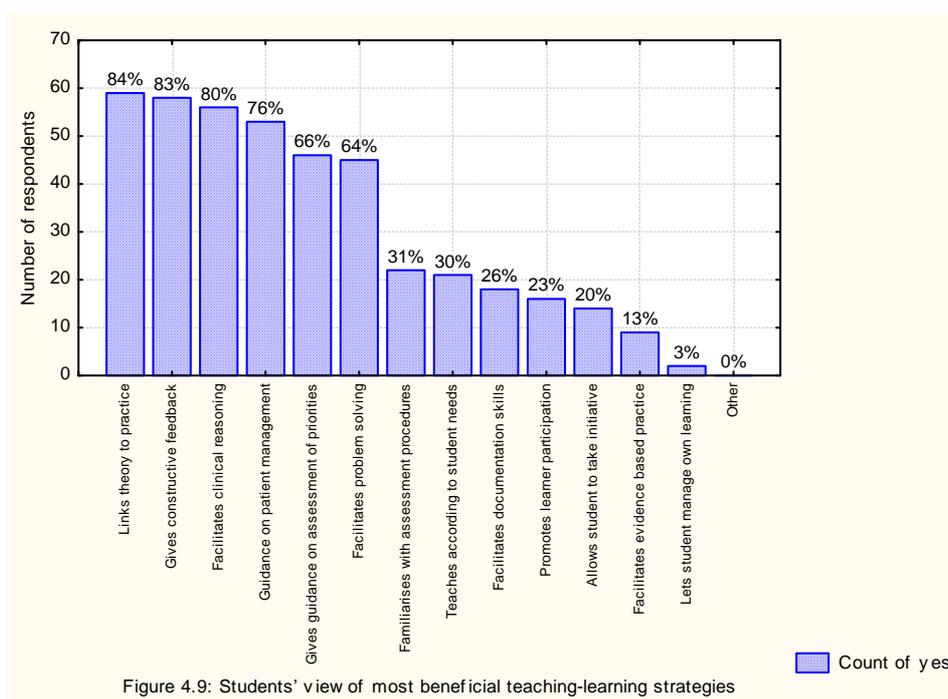


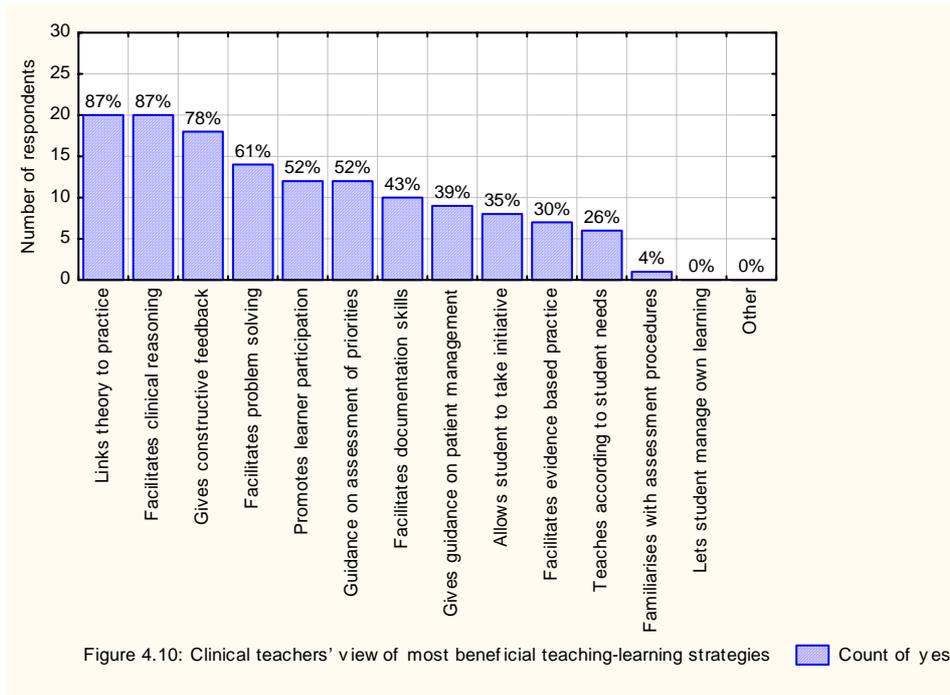
On distinction between the views of the fourth- and third-years, the fourth-years show the same pattern as above, but the third-years voted feedback as the second highest.



4.6.2 Teaching-learning strategies

Participants were asked to choose from a given list, the teaching and learning strategies used by the teacher that are of most benefit during clinical education. Responses are illustrated in Figures 4.9 (students) and 4.10 (teachers).





4.6.3 Further analysis and discussion of teaching-learning activities

The researcher designed the questionnaire to go into more depth relating to certain of the constructs of the questionnaire specifically relating to teaching-learning activities. Differentiating questions were asked on the value of the different types of demonstration, discussion, feedback, assessment and other teaching-learning activities seen as conducive to learning in the clinical milieu. Participants had to rank the statements on a scale between 1 and 5, where 1 was considered as most valuable/important for learning, and 5 was considered least valuable/important for learning (also see Appendix A & B). The results of selected aspects of the above construct are displayed in the tables below. A non-parametric test (The Mann-Whitney U test) was used to determine if differences between the learners' and the clinical teachers' views were statistically significant with a p-value of < 0.01. Those constructs with a statistical difference are marked with a (*) in the tables below. The standard deviations (SD) are also indicated between brackets.

Table 4.4: Focus on demonstrations

Construct	Students' mean score (SD)	Teachers' mean score (SD)
a) The teacher demonstrates patient evaluation/treatment	1,89* (0,10)	2,48* (0,17)
b) The teacher observes clinical practice of student and comments	1,77 (0,10)	1,87 (0,17)
c) The student demonstrates clinical practice and the teacher facilitates the process	1,77 (0,11)	1,78 (0,18)
d) The student observes a peer during clinical practice	2,81* (0,07)	3,13* (0,16)
e) The teacher facilitates reflection after a demonstration	2,43* (0,09)	1,81* (0,17)
f) The student completes a patient documentation form	2,91 (0,10)	2,61 (0,18)
g) Routine evaluation/treatment of the patient by the student	2,69 (0,09)	2,74 (0,16)

Students and clinical teacher participants valued demonstrations as one of the most valuable clinical teaching-learning activities (Figures 4.7 and 4.8). The students and teachers agreed that students learn most when the student demonstrated clinical practice and the teacher facilitated the process (Table 4.4(c)). This notion is further strengthened by the construct seen as the second most valuable by both the students and the clinical teachers namely the teacher observing the clinical practice of the student, followed by feedback (see Table 4.4(b)). However, students and clinical teachers disagreed with regard to the value of a demonstration given by the clinical teacher. Students rated demonstrations performed by the teacher much more highly than teachers (Table 4.4(a)). The difference between the views of the students and teachers was statistically significant with $p < 0.01$. The difference could possibly be explained by the notion that the teacher values active participation of the student and gives the student self-responsibility for learning. It is a possibility that teachers regard demonstrations by the teacher as passive learning by the student. Students and clinical teachers had differing views (also statistically significant at $p < 0.01$) regarding the student observing other students during clinical practice. In the interviews learners elaborated on this aspect (Chapter 5).

Table 4.5: Focus on discussion

Construct	Students' mean score (SD)	Teachers' mean score (SD)
a) The teacher does a one-to-one tutorial with the student	1,69 (0,11)	2,08 (0,19)
b) The student participates in small group discussion on patient management	2,06 (0,10)	2,09 (0,18)
c) The student participates in a discussion on X-rays	1,93 (0,10)	2,26 (0,18)
d) The student is tutored by a fellow student	2,94 (0,08)	3,13 (0,14)
e) The student participates in a ward round	2,82 (0,12)	2,78 (0,21)
f) The student presents a case study to fellow students/staff	2,67* (0,10)	2,09* (0,17)

Discussions with the teacher were selected by most students as one of the most valuable teaching-learning activities (Figure 4.7). The same figure indicates that most students preferred discussions to be in the form of an individual learning session rather than in the form of a group learning session. Clinical teachers also selected discussions with the teacher as one of the most valuable teaching-learning activities. However, in contrast to the student participants, clinical teacher participants viewed individual discussions and group discussions as equally important (Figure 4.8). Table 4.5(a) confirms that students view discussion in a one-to-one situation as most beneficial for learning, once again strengthening the notion of individual attention.

Table 4.6: Focus on feedback

Construct	Students' mean score (SD)	Teacher mean score (SD)
a) The teacher gives verbal feedback	1,76 (0,10)	2,30 (0,17)
b) The teacher gives written feedback	2,34 (0,10)	2,35 (0,18)
c) The teacher gives immediate feedback	1,59 (0,09)	1,30 (0,16)
d) The teacher gives feedback on what the student did well	2,11 (0,08)	1,74 (0,15)
e) The teacher gives feedback on the student's limitations	1,74 (0,10)	2,22 (0,17)
f) The teacher gives feedback on the student's limitations and strengths	1,52 (0,09)	1,26 (0,16)
g) The teacher gives feedback on the student's knowledge	2,17 (0,10)	2,26 (0,17)
h) The teacher gives feedback on the student's skills	2,01 (0,09)	1,96 (0,16)
i) The teacher gives feedback on the student's attitudes	2,36 (0,12)	2,65 (0,2)

Most clinical teachers and students valued feedback to students as one of the most important teaching-learning activities (Figures 4.7 and 4.8). The importance of constructive feedback was reiterated by teachers. Students rated it the third and second highest respectively, as can be seen in Figures 4.9 and 4.10. A close analysis of the data presented in Table 4.6, clarifies student preference regarding feedback in clinical education. Students demonstrated that they learn most from feedback on both their

strengths and limitations. The teachers agreed with this notion. Students also found verbal feedback to be more beneficial than written feedback. Students indicated that they learnt a lot from prompt feedback, a view that was endorsed by the clinical teachers. Students indicated that they learnt a lot from feedback on knowledge, skills and attitudes, although they seemed to value feedback on skills more.

Table 4.7: Focus on assessment

Construct	Students' mean score (SD)	Teacher mean score (SD)
a)The student assesses him/herself on patient management	3,29 (0,11)	3,00 (0,20)
b)The student is assessed by other students on patient management	2,91 (0,09)	2,64 (0,16)
c)The student is assessed by the patient on patient care	3,09 (0,11)	3,22 (0,20)
d)The teacher assesses the student using a mock test situation	1,74 (0,11)	2,04 (0,20)
e)The teacher assesses the student on the end of block test	1,99 (0,12)	2,57 (0,21)
f)The student assesses his/her own learning	3,2 (0,10)	3,09 (0,17)

Of all the assessment options given in the questionnaire, participants in this study regarded a formative assessment tool, namely the use of mock assessment, as the most valuable for learning (Table 4.7(d)). The reason for the above is probably that the mock test is a simulation of the actual clinical competency test.

The students and the clinical teachers differed in their view of the value of the end of block competency assessment (Table 4.7(e)). However, this difference was not statistically significant. The reason for the lower (although still above average) rating of the clinical teachers could be attributed to the consequences of summative assessment. Teachers might be of the opinion that the students only receive a grading and written/verbal feedback after the assessment, without an opportunity to react on it (remedial action if necessary). Students, on the other hand, are actively involved in the process and might view the test situation as an opportunity to learn from their mistakes.

Student and clinical teacher participants attributed medium values of learning efficacy to peer assessment (Table 4.7(b)). Furthermore, a low proportion of students (9%) and clinical teachers (35%) voted peer assessment as one of the most valuable teaching-learning activities (see Figures 4.7 and 4.8). The results derived from the interview shed some light on these views (see Chapter 5).

Students in this study experienced self-assessment as only reasonably effective for producing learning, as indicated in their responses to all of the questions related to self-assessment in the questionnaire (see Tables 4.7(a), 4.7(f), 4.8(g) and 4.8(h)). Clinical teachers' and students' rating for self-assessment and self-reflection differed significantly within two of the named constructs ($p < 0.01$). Self-assessment should, however, not be seen as ineffective in producing learning, as the results could indicate. A possible reason for the low rating of self-assessment could be that the process of self-assessment was not being effectively applied in the clinical education programme.

Table 4.8: Focus on other teaching-learning activities

Construct	Students' mean score (SD)	Teacher mean score (SD)
a) The teacher allows the student to share responsibility for learning	2,00 (0,10)	1,91 (0,17)
b) The teacher gives a lecture on patient management	2,36* (0,11)	3,26* (0,19)
c) The student does role-play about clinical practice	2,86 (0,11)	3,39 (0,19)
d) The student observes surgery	2,57* (0,11)	3,30* (0,19)
e) The student observes a video on patient management	2,8 (0,10)	3,09 (0,17)
f) The student and teacher plan learning activities together	2,44 (0,11)	2,13 (0,19)
g) The student draws up a SWOT analysis on his/her clinical abilities	3,37* (0,11)	2,65* (0,20)
h) The student does self-reflection on clinical abilities	3,16* (0,11)	2,30* (0,19)
i) The student writes a report on patient management	3,29 (0,09)	2,96 (0,15)
j) The student keeps a 'clinical journal'	3,16 (0,11)	2,78 (0,18)

Two other constructs elicited statistically different responses from the students and clinical teachers ($p < 0.01$). These constructs can be seen in Table 4.8 (b) and (d). The difference in rating could be explained by differences in interpretation of the two constructs.

Participants in the study agreed that students and teachers should share the responsibility for learning (Tables 4.8(a) and 4.8(f)). Students and teachers do not think it is wise for students to manage their own learning (Figures 4.9 and 4.10), further strengthening the notion that students and teachers are co-producers of knowledge.

As can be seen from Figures 4.9 and 4.10, students and clinical teachers largely agreed on the most important teaching-learning strategies. Students included guidance on patient management and the assessment of priorities, while clinical teachers valued promoting learner participation more. A small proportion of students voted promoting active participation as one of the most important teaching-learning strategies.

4.7 SUMMARY OF THE CHAPTER

Chapter 4 summarised the results generated from the questionnaire that was administered to the students and the clinical teachers. Although participants in the study largely agreed on the constructs that were posed in the questionnaire, several significant differences in their views were highlighted. Participants rated demonstrations, discussions with the teacher, feedback, mock assessments and reflection as important teaching-learning activities to facilitate learning. Students seem to prefer individual learning sessions to group discussions, although they realised the value of group learning sessions. Important roles of the clinical teacher were identified as facilitator of learning, mentor and assessor. Clinical teacher attributes of approachability, good communication and recognising student abilities were seen important in influencing learning. Although the aim of the study was not to compare the views of the clinical teachers and students, it is important to know where differences existed. Establishing where differences existed may guide clinical education programmes for teachers and students and may also guide further research.

This chapter displayed the participants' views on the most important roles and attributes of clinical teachers that contribute to a learning environment that is conducive to learning. The teaching-learning activities participants viewed as most valuable to enhancing learning were presented displayed in this chapter. The results of the second data generation tool (semi-structured interview) are discussed in the next chapter.

CHAPTER FIVE

RESULTS AND DISCUSSION OF THE INTERVIEWS

Chapter 5 describes the data generated during semi-structured interviews. As described in Chapter 3, a random sample from the population was drawn to take part in semi-structured interviews. The interviews focused on topics identified from the preliminary analysis of the students' questionnaires. Topics needing further examination or clarification were identified by the researcher. These topics were then included in the schedule of the interview (see Appendix C). The interviews focused mainly on efficacy of teaching-learning activities as it was the main focus of the study. Some questions were also asked about clinical teacher attributes and roles. Topics discussed in the interviews were: best clinical learning experience, demonstrations, discussions, feedback, mock assessments, peer assessment, responsibilities, good clinical teaching, the roles of the patient and the clinical teacher. The views of the students are firstly discussed, followed by a discussion of the views of the clinical teachers.

5.1 PROFILE OF THE INTERVIEWEES



The random sample consisted of six third-year students (all female), six fourth-year students (two males) and six clinical teachers (one was a clinician, and there was only one male). The clinical teachers' experience in clinical teaching varied from one year to 11 years' teaching in a variety of fields of physiotherapy. These fields were orthopaedics (3), medical and surgical (1) and neurology (1). There was also one clinical teacher who was involved in teaching in all three fields of physiotherapy.

5.2 ANALYSIS OF QUALITATIVE DATA

Written informed consent for the interview was obtained prior to the interview. The interviews were recorded using a digital voice recorder. Following each of the interviews, the researcher recorded her field notes. Thereafter the recorded interview was downloaded from the digital voice recorder to a computer. Two copies of the interview were made on audio compact discs. The researcher transcribed the interview data for analysis (See Appendix H for an example of a transcript). A unique serial number was

allocated to each of the data sets for reference purposes. The text were then analysed according to guidelines as given in Denscombe (1998:210-212). The researcher categorised the text, aiming to find common themes or events. Field notes were also considered. The researcher endeavoured to determine strong feelings about ideas, as well as differences between interviewees and interviewee groups. These themes and their possible relationships were grouped together. Most of the interviews were conducted in Afrikaans therefore most quotes in the text have been translated by the researcher.

5.3 VIEWS OF THE STUDENT INTERVIEWEES

5.3.1 Best clinical learning experience

All students identified their best clinical learning experience as any clinical placement where an open, relaxed atmosphere existed between the students and the clinical teacher, and where the students felt free to ask questions and make mistakes. On questioning what the best clinical teaching activity was, all interviewees identified demonstrations of patient management as the best clinical learning experience.

5.3.2 Demonstrations of patient management

The interview results confirmed the questionnaire's results. Demonstrations of patient management were identified to be the most useful clinical teaching activity. Demonstrations in general helped students to think creatively and imaginatively. A student stated: "Demonstrations helps me to think out of my boxes of theory and practical. It helps me to mix my boxes of different subjects", thus integrating theory with practice. Students differentiated between the three types of demonstrations as those given by the clinical teacher, those given by the student, and those where the student is an observer when another student performed a demonstration. The students preferred the first two options.

Demonstrations of patient management by the teacher were described as situations where "the clinical teacher performs the patient management step by step, demonstrating the subdivisions of the patient management". These subdivisions were stated as going through the patient folder, performing the interview, planning and performing the physical assessment, as well as management strategies for the patient. Through the whole process, students stated, teachers should explain their reasoning processes. This need not be a long discussion; a short explanation should be adequate.

Students identified the fact that especially in the first clinical placement, a demonstration on patient management helped to determine where to start the process of patient management, what to assess, and how one should approach the patient and the situation. It orientates the students towards the type of conditions which will be seen on the clinical placement as well as general patient care. An interviewee gave an account: "In the beginning I did not know where to start or how to start, I did not know what to assess. The demonstration gave me a pattern of doing; it helped me to determine where to start". Another stated: "In the beginning I struggled, I did not know where to start..." Students identified several other advantages of a clinical teacher demonstration, for example that it directed students' thought processes as it provided a pattern of thinking and doing. It also sets a standard for approaching the clinical encounter: "...during a demonstration you see a standard of how a patient assessment/treatment should be". Furthermore, it helped students to identify the type and logic of questions to ask. Students also stated that demonstrations by the teacher helped them to observe physical handling skills. The following statement motivates: "Teacher demonstrations shows me how to adapt my techniques, for example my grip, to make the technique more effective and comfortable to the patient". According to the students who were interviewed, demonstrations on patient management facilitated their clinical reasoning process as they could compare their thinking process with that of the teacher. Another advantage of a teacher demonstration according to a respondent is that "... you can practically see the application of the biopsychosocial model that everyone is talking about". Some students felt strongly that the teacher should give at least two demonstrations during the first week of the clinical placement.

When the students demonstrate patient management and the clinical teacher facilitates the process, students felt they are actively participating in the process of making mistakes and correcting them. One student stated that "... observing someone doing something and then doing it yourself is quite different, you really only learn when someone corrects you and gives you feedback on what you are doing".

Demonstrations by the students were regarded as an ideal opportunity for the clinical teacher to give specific feedback. Interviewees especially requested feedback on physical techniques and reasoning skills. Students stated that such demonstrations helped them to determine whether their clinical reasoning was on the desired level according to the guidance the clinical teacher was providing. Questioning by the teacher helped the

student to motivate choices and could help to adapt thinking processes. The process of questioning helped students to analyse themselves more effectively. A student pointed out: "...the process of analysing yourself does not occur automatically", but that it was facilitated by demonstrations and feedback. Interviewees appreciated the fact that they had received personal attention and guidance from the teacher during the student demonstration.

Interviewees felt that although it can be very stressful to give a demonstration, but: "it definitely helps you to develop, as it develops your confidence". It develops communication skills, as students are required to present information and reveal their thought processes to others while they are demonstrating. Therefore, when students give a demonstration, they are being prepared for communication with colleagues and patients.

Although students preferred to give a demonstration themselves, they saw the value of observing their peers performing a demonstration on patient management. From this activity, students were able to identify others' mistakes, which helped them to realise that they often make the same mistakes. Through observing their peers, students developed their skills of observation and were able to learn from others' thought processes. The students also made use of this opportunity to compare their level of thinking to that of their peers. Students did not mind the presence of other students as observers during their demonstration with the teacher, and reiterated that the opinions and views of other students contribute to learning. However, as observers, students admitted that they were unwilling to make comments about the clinical performance of other learners (this aspect will be discussed in the section on peer assessment).

5.3.3 Feedback during demonstration of patient management

Students in the interview had mixed opinions on how feedback and facilitation should be handled during their demonstration. Some students preferred the teacher to comment while the demonstration was taking place (immediately intervene), while others preferred the teacher to wait until one section of the assessment or treatment had been completed, before she/he commented or facilitated reasoning. Both these practices have advantages and disadvantages.

In the first instance the student is corrected before he/she continues to perform an inappropriate/ineffective technique, but: "constant interruptions during my demonstration

disturb my thoughts and concentration". The teacher does not wait to see if student automatically corrects him/herself. The student could feel threatened or ill-equipped if the teacher intervenes frequently, which could have an adverse effect on motivation and learning. In the second instance, the student's thought processes are not disturbed and the student may show initiative or show the ability to assess and correct him/herself. However a student stated the contrary: "if you only get feedback after the demonstration, then you have forgotten most of the things. If feedback is given immediately, you can apply it immediately, or immediately adapt your technique". Returning to what has already been done could lead to unnecessary repetition, time wastage and inconvenience for the patient. The basic principle is thus that the clinical teacher should clarify what sequence of feedback the student prefers. A student also motivated: "The teacher should give immediately feedback when I do something seriously wrong that could harm the patient". When unsafe practice is observed, the teacher should intervene immediately so as not to compromise the safety of the patient.

Some students felt that feedback can be given at any time during the demonstration as the important factor is *how* it is done. One student stated: "On the other hand, feedback can be given during the demonstration, depending on how it is given". If feedback is given in an unnerving manner, it would make me uncomfortable and nervous". Students also felt strongly that the teacher should not take over the demonstration if the student is not coping, by stating that: "...Rather guide me than pushing me away and doing the demonstration. Ask guiding questions so I can figure it out for myself...". The clinical teacher should thus try to help the student by offering advice and suggestions and then seeing if the student can correct him/herself. Students stated that if the teacher takes over, the student does not learn much.

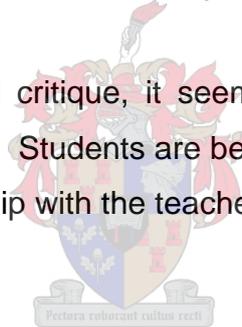
5.3.4 General feedback

Students generally felt positive about receiving feedback as it helps them to identify their strengths and weaknesses. Feedback thus gives direction to a student's development. In this study, students expressed the need for feedback on both their strengths and their limitations. One student stated: "Feedback on my weak points helps to point out what needs to be done to improve. Feedback on strong points helps me to feel good about myself and increases self-confidence." Another said: "I want to know what I am doing well, but mostly I also want to know what I need to work on."

Students pointed out that feedback should be specific and focus should not only be on the content of feedback, but also on the way feedback is given. Feedback on weaknesses should not be disparaging, but should provide suggestions or advice on improvements.

Students seemed to take the issue of feedback very personally. They emphasised that clinical teachers should take students' feelings of learners into consideration. Some clinical teachers were said to give ill-considered feedback that hurts the students' feelings. One student explained that physiotherapy students have a close emotional involvement in their profession: "When you (the clinical teacher) give critique, think about what you are saying. ... Students are very fragile. ... We put so much into physio, physically and emotionally, it is emotionally draining, it is part of you as a person, it forms an integral part of your life. That is why we take feedback personally". One student stated: "Physiotherapy students are very unsure; feedback can make or break them and has a lasting effect on their careers." Another stated: "Clinical teachers should realise that they are working with scared and unsure students. They need to give constructive feedback".

The interpretation of feedback and critique, it seems, depends on the relationship the student has with the clinical teacher. Students are better able to handle negative feedback if there is a good personal relationship with the teacher.



5.3.5 Discussion

Interviewees differentiated between two types of discussion, namely discussion after a demonstration and discussion on general patient management. The importance of making time for discussion after a demonstration to conclude the session was emphasised by students. These discussions facilitated problem solving, the decision-making process, as well as understanding. Discussion was identified to be an important tool for reflection and self-assessment. Interviewees however agreed that there is seldom time for discussion after demonstration stating that: "...often, we exceeded the time limit for the demonstration, or there are other patients waiting for us". One student noted that an hour should be allocated to demonstrations, with half an hour extra if the demonstration takes place in a group situation. The extra half hour will allow enough time for discussion.

Discussion on general patient management was described as sessions where students present their problem or interesting patients to each other and to the clinical teacher. These discussions occurred in a small group situation where everybody could give input.

It helped the students to do self-assessment. The questions asked by other students facilitate clinical reasoning (for example, questions such as “Why did you do this? Why do you think so? Have you tried this?”). Questioning during discussions helped the students to identify what has not been covered (what else could be done). Such discussions, students reported, helped them to express themselves and handle critique.

5.3.6 Reflection and self-assessment

Students identified that reflection as a formal teaching-learning activity is not often used. However, as discussed in the previous sections, reflection may be facilitated as part of discussions and feedback. In the interviews, it became apparent that some students recognised self-evaluation as an automatic process and not necessarily as a formal learning process.

It was obvious from the interviews that students regarded reflection and self-evaluation as synonyms. Generally, students doubt the efficacy of self-reflection and self-assessment and admit to having limited self-knowledge (and therefore cannot identify what they have done wrong). Self-reflection for students is therefore not always trustworthy. Students identified that self-assessment need to be discussed with someone (i.e. clinical teacher) to enhance its effect. However, students recognised the usefulness of reflection as summarised in the following statement by a student: “Although reflection is only used occasionally, it helps me to plan for the future by thinking about how I am going to handle a similar situation in future.”

In the interviews, several students commented that the self-assessment tool that is generally in use is insufficient. The tool referred to is the SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) students are required to complete at the beginning and in the mid-week of each clinical placement. Students commented that they tend to write the same comments for every block without really thinking about what they are writing. Writing the same comments in the same or different placements could indicate that the student is not developing in identified areas. The use of the SWOT analysis was questioned by the students stating that: “we are unsure about it, we do not know why we should do it. I don’t think we realise the importance of it, so we complete it quickly in five minutes”. Students interviewees, however, suggested an improvement to the use of this tool that would make it worthwhile completing. Interviewees suggested that clinical teachers discuss the SWOT analysis with the student and plan learning goals and

activities that relate to the SWOT analysis. Students therefore appeared to suggest that the SWOT analysis be transformed to a learning contract.

Students are also required to write a reflective statement at the end of each clinical placement. The following comment summarises most of the interviewees' feelings: "What is the use of the block reflection? Nobody reads it. It should followed up to improve its value". The practice of these reflective statements also needs to be adapted to make it more learner friendly.

5.3.7 Mock test

A mock test is a formative test and a simulation of the actual clinical competency test. The general impression regarding the mock test is that it is a very useful tool. Student interviewees were very positive about the use of a mock clinical assessment in learning. One student, however, admitted that he does not prepare for mock tests as well as he does for the actual competency test, as he knows that the mock test does not count for marks.

When questioned about the perceived value of mock tests, a student stated: "it is an excellent preparatory session. You learn what is expected form you." Most students agree with the above student. The mock test prepares students for the actual clinical competency test. It helps students to ascertain what is expected from them during the test (thus assessment criteria) and they learn the procedure of what will happen during the test. In this way students become familiar with the test situation. The learning value of the mock test therefore centres on preparation for the test.

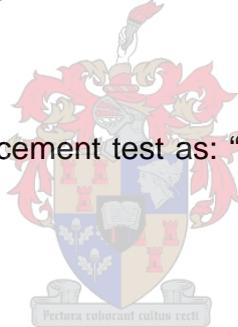
Some students acknowledged the value of the mock test for development as "it helps you to identify your faults and what you are struggling with". Another stated: "It helps you to identify your faults and to assess yourself." Mock tests thus helps students identify their limitations and possibly to help them focus attention on where to improve, thereby guiding remedial action. It provides the opportunity to clarify students' questions or uncertainties, and therefore it promotes discussion.

A student interviewee stated that: "Feedback after a mock test is extremely important as valuable feedback is given after the mock test". This type of feedback is often not given after the final clinical placement competency test and if it is given, the student often does not pay sufficient attention to it. Another student said: "...the mock test is a valuable

exercise, as it gives students the opportunity to ask questions”. Students do not always have the chance or the motivation to ask questions after the clinical competency test. These comments could indicate that after summative assessment, the drive for learning is less than after formative assessment. The observations by the students confirm the notion that assessment drives learning, i.e., when the assessment has taken place, the students’ drive to learn on the clinical placement is less. The implication is that although the clinical competency test is seen as an assessment event for both summative and formative purposes, it probably has a more summative function for students.

The impression exists amongst students that “the mock test can give one reassurance of your skills”. However, one must realise that a mock test can motivate or de-motivate students. For example, if a student fails the test, he/she might become despondent. Furthermore, the mock test might give the student who passes the test a false sense of security. Therefore, it is necessary that proper feedback, and a plan of action, is discussed with the learner following a mock test situation and that debriefing are done appropriately.

Some students also value a pre-placement test as: “...it helps you to look at assess your basic knowledge”.



5.3.8 Peer assessment

The students had mixed feelings about peer assessment. Students were mostly concerned that they may be unfamiliar with the assessment criteria for the given situation, as all clinical situations differ. Students were generally unsure about the efficacy of peer assessment as assessment tool, since they do not trust each other’s judgment and feel that it is difficult to be objective with fellow students. One student stated: “I don’t know what to look for in such a situation. I just mark everything as right when I am judging my peers” and “I don’t feel competent to judge my peers”. Furthermore, students know each other’s academic record and feel uncomfortable and nervous if marked by a peer who is academically superior. This situation they said has negative effects on their self-confidence. Students pointed out that feedback to peers needs to be given carefully or else fellow students could feel offended. There is a general feeling amongst students that peer assessment could lead to undue strain amongst them in the learning environment. However, not all comments on peer assessment were negative. Students found it useful to observe others, as “... it helps to identify your own mistakes when you identify the

mistakes of others”. Also: “as an observer you are looking in from the outside. You feel more relaxed and can observe faults that you often make. Your observation skills improve”. As observers, students do not feel the need to perform, since they focus on observation and on their own thinking processes. Another student stated: ‘It (peer assessment) helps you to look at things differently...it helps you with self-assessment...to assess how you would have done it”.

5.3.9 Responsibility of the student

The students were asked what they thought the students’ responsibility in the learning process was. Most students realised that their development was their own responsibility. With regard to responsibility, students mostly identified the need to know relevant theory and practical techniques and to read up on patient conditions. Students thus focused mainly on theoretical aspects. A third year student stated: “You should take responsibility (for learning) as it helps you to function independently. You can choose to take responsibility and learn more, or you can sit back and do nothing. It is your choice”.

To a lesser degree students identified their responsibility to ask for help from the clinical teacher. A student stated: “My knowledge is my responsibility that is why I ask many questions and make appointments with the clinical teacher”. Students felt that they were responsible for “making the most of learning opportunities” that came their way. They did not think they could play a major role in planning learning activities. One student regarded it as important to know the outcomes of the specific clinical placement in order to work towards achieving them.

A strong feeling existed amongst some interviewees that if the clinical teacher sees that a student is not taking responsibility for learning, action needs to be taken and the student needs to be made aware of the consequences. More specific attention then needs to be given to this student. One student also advocated: “...as the block (placement) progresses, the clinical teacher should gradually withdraw and give me more responsibility to do things on my own”.

5.3.10 Motivation

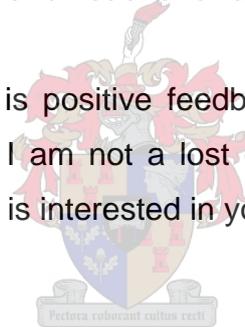
Patients play a crucial role in motivating students. Patients supply the learning event and challenge students with real-life problems. Student interviewees confirmed the important role that patients play in the learning event. In fact, several students stated that the patient

is a huge motivating factor for learning. Students see the patient as one of the biggest motivating factors in learning in three respects:

- Students are motivated to help patients and this motivation seems to facilitate self-directed learning. Many student interviewees stated that they often searched for information to understand the patient's problem. One interviewee motivated: "When I realises I do not know enough about the patient's condition, it motivates me to read up on that condition".
- The student is motivated to do more when he sees an improvement in the patient's condition.
- If a patient gives positive feedback, it motivates the student. A student stated: "...the patient motivates me by giving me recognition for what I have done...".

Students appear to have learnt from patients. They learnt to treat every patient individually and to recognise different clinical patterns. They also learnt how to handle different situations. The patient is thus a powerful teacher and motivator in clinical education.

Another powerful motivating factor is positive feedback from the teacher. One student stated: "It helps me to realise that I am not a lost case." Another student stated: "If a clinical teacher cares about you and is interested in you, it motivates you".



5.3.11 Other findings

Some interesting findings that emerged from the interviews centred on the students' feelings as physiotherapists and their proficiency in techniques.

It was clear from the interviews that students felt that more support needs to be given to third-year students on clinical placements. The first clinical placement, where students take responsibility for patient care for the first time, is particularly important for the students. Although students stated that they prepare themselves (theoretically) for the first clinical placement, they feel scared and perplexed, because "... you have theoretical knowledge, but less people knowledge". It is probably students' feelings of uncertainty that motivate them to take such a keen interest in demonstrations by the teacher in the first clinical rotation. Fourth-year learners, especially, identified the difference in clinical learning between the third and the fourth years. A third-year, who is working in the clinical environment for the first time, works hard at trying to adapt and cope in the new environment and treating a patient for the first time. Students in this situation are therefore

less concerned about the learning process, and more concerned about the process that must be followed (what to do next) and the techniques to use. Fourth-year students focus more on clinical reasoning and learning, as they are familiar with the basic clinical process.

Students stated that they felt a great responsibility as health care providers. They felt they need to 'perform' in order to help patients and make patients feel better, since "... if you do not know your work, you could disadvantage the patient" and "sometimes you have a tremendous influence in the persons life and what his outcome is going to be. If you do not do your work, you may impede the patient". Another theme that emerged from the interviews with the students is the students' lack of confidence in their own abilities. This aspect is beyond the scope of this study, but should be further investigated.

Students, especially fourth-years, admitted a lack of vigour in learning and practising practical techniques during and after practical laboratory sessions, therefore, their technique was not as good as it should be. A student observed: "we only really practise techniques in class (but we do not practise a lot in class, due to the social atmosphere in the class) and before a test". Yet students acknowledged that it is their own responsibility to know basic techniques applicable to the clinical placement and to be able to apply them.

Students also referred to the difference in performing techniques in practical laboratories and on a patient at the clinical placement. To motivate, a student stated: "Performing a technique on a patient who has underlying pathology is quite different from performing the technique on a normal model in the practical session." Several students requested more feedback on performance of techniques during the clinical placement, stating that: "...most students are unsure of their techniques. We do not know what we do well or what we do badly. We need feedback on what aspects of the techniques we need to work on".

5.3.12 The roles and attributes of the clinical teacher

Interview results confirmed that approachability of the clinical teacher is the most important attribute of the clinical teacher. Students regarded a teacher as being approachable if they felt "free to ask questions without the teacher being prejudiced towards me". The students also described approachability as an open door policy, where the student can ask the teacher anything, knowing that the teacher will be willing to help. Students viewed a clinical teacher as being approachable if he/she is interested in the student as a person and cares for the student as an individual. Clinical teachers needs to affirm this

approachability verbally and “should invite students to their offices to discuss issues”. Students also said that they were able to determine if the clinical teacher is approachable through her non-verbal communication (for example “if the teacher is always in a hurry and busy, she is not seen as approachable”). Students generally regarded approachability as involving more than the contact in the clinical learning session (“it is not just about that one hour the teacher spends with you”). It should be evident in daily contact between the teacher and the students.

Another strong theme that emerged from the interviews with the students is the clinical teacher’s personal interaction with the students. A teacher with good interpersonal skills, who is able to connect with the students, was seen as a good clinical teacher. Other interpersonal characteristics of a good clinical teacher include: “Someone who listens to you and your problems and not just bla, bla, bla. And tell you this and that. ... I also have questions... but you do not give me the opportunity to ask questions”. A good clinical teacher was also thought to be responsive to what the students have to say.

The clinical teacher should also communicate and teach on the level of the students, and respect the difference of power in the relationship. Students appreciate it if the clinical teacher realises that the students do not have as much experience as the teacher and if the clinical teacher respects individual differences between students. A good clinical teacher is one who does not make the students feel stupid, but gives constructive criticism. Students value a clinical teacher whom they can trust and who is able to make casual conversation with them, thus establishing an open learning atmosphere.

It was the students’ view that a good clinical teacher should facilitate learning, not take over and dominate the learning session. A student motivated: “...the teacher should give you (the student) a chance to show what you can do”. Facilitation of learning helped students to think of a solution in a logical way, thus giving them an opportunity for clinical reasoning. The clinical teacher should thus give students the opportunity to explore without taking over the learning session.

Students also described a good clinical teacher as one who is able to ascertain the learning needs of each student according to that student’s specific level of development and experience. The student then needs to be helped to work out a plan for him/her to address his/her needs. Students described this attribute of the clinical teacher as

assertiveness (being able to take the lead, diagnose student needs and address them appropriately). The clinical teacher should also give special attention to students who struggle, and in this way show interest and care.

Other comments include that the teacher should be a dynamic, enthusiastic, articulate person who has the ability to explain well.

The teacher was also seen as a role model for professional conduct with patients, colleagues and students alike. Students stated that they would doubt the credibility of their profession if clinical teachers (especially clinicians) did not enjoy their work and provided ineffective patient treatments. Students stated that they admire a clinical teacher who shows that she/he cares for patients, treats patients holistically, and approaches all patients with respect and as equals. Students also believed that the clinical teacher should be knowledgeable and emphasised that they have much respect for teachers they consider to be knowledgeable in the field of practice.

The students indicated emphatically that they saw the clinical teacher as an assessor, and that students should know what their clinical teacher expected from them. This could indicate that the teacher as an assessor could dominate the teacher as a learning facilitator. Furthermore, if the student focuses solely on what the teacher wants, his/her own learning goal and the goals of the programme could be ignored. Two students reported being hindered of asking questions as they fear that the teacher might become prejudiced towards them if they ask "stupid questions". The teacher as assessor could have hinder the openness of the learning atmosphere.

Finally, it emerged that the interviewees seem to view the clinician on the clinical placement as an informal teacher and the clinical lecturer as a formal teacher. Students expect the clinical lecturer to be a role model, both as a teacher and as a clinician (physiotherapist). It is important for learners that the clinical teacher is able to diagnose the learning needs of the students as well as the health needs of the patient.

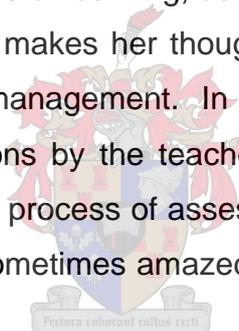
5.4 VIEWS OF THE CLINICAL TEACHER INTERVIEWEES

5.4.1 Clinical teaching

All clinical teachers interviewed felt strongly that their role in clinical education is to facilitate clinical learning using guidance, appropriate questioning, clinical reasoning and problem solving. They did not see their role as teaching theoretical aspects and demonstrating or teaching techniques, but rather facilitating of integration.

5.4.2 Demonstrations

Through the interviews it became clear that clinical teachers only performed demonstrations on patient management if they are really required to do so, "...particularly if students request a demonstration or if the student is not coping with their demonstration". Some clinical teachers performed demonstrations particularly in the first clinical placement of the year. The limited use of teacher demonstrations could be due to teachers' perceived role as facilitators of learning, as stated above. One teacher identified how important it is that the teacher makes her thought processes known to the students while she is demonstrating patient management. In this way, "students may learn how to think and reason". In demonstrations by the teacher, teachers hope that learners may learn a specific pattern of thought or process of assessment/treatment of the patient. One teacher also noted: "Students are sometimes amazed to see how the practical techniques and theory relate".



However, all teachers interviewed preferred that students perform the demonstration with appropriate guidance from the teacher. A clinical teacher described the course of a session as follows: "I would let the one student sit in during the demonstration of the other student. We then give feedback to the one who is doing the session. Later, the students change roles". In such a situation the teachers stated, they can ascertain how the student is thinking, and whether the student is making logical conclusions. It also helps the teacher to correct techniques and identify the student's strengths and weakness. Clinical teachers value demonstrations of patient management by the student as: "it helps the student to communicate and to express what he/she is observing and thinking".

5.4.3 Discussion

Clinical teachers stated that they question students during the demonstration given by the student and discusses issues during the demonstration. In addition, clinical teachers

made use of discussions after a demonstration, but only if time allowed. Teachers pointed out that in most cases time did not allow for a detailed discussion after a demonstration, because students on the clinical placement have extremely busy schedules. When discussion does take place after demonstrations, they focus mainly on the clinical reasoning process and on how to integrate theory and practice, for example: "...discussing how (students) know when it is a disc lesion or facet joint pathology".

Most clinical lecturers interviewed did not participated in weekly/daily discussions on general patient management. However, the one clinician who was interviewed organised such sessions and participated in them. The interviewee identified that such discussions gives students the opportunity to discuss problem patients and interact with each other.

5.4.4 Clinical reasoning

On the question of how clinical reasoning and problem solving could be facilitated, a teacher suggested that it was essential to follow up theory that had been done in class with a demonstration on a similar patient. In this way students can immediately see how to apply theory in practice.

Clinical teachers interviewed felt that clinical reasoning and problem solving may be developed by demonstrations and facilitation of learning. Some clinical teachers felt that appropriate questioning and discussion may lead to clinical reasoning. As motivation, a clinical teacher described: "...to question specifically on what the student's thinking process was when the deduction was made or what reasoning lead to the hypothesis made".

5.4.5 Feedback

One teacher experienced students as being reasonably open to feedback, but stated that the scene for feedback needs to be set: "...tell students to learn out of the situation, don't take it personally". This means that the teacher needs to explain to the students what the aim of feedback is (a learning situation). Giving appropriate critique is important for the clinical teachers to point students in the right direction towards improvement. A clinical teacher acknowledged: "their (students) confidence takes a plunge when (the teacher) gives too much critique". Some teachers therefore regarded balanced feedback on the strengths and limitations of the student as important.

5.4.6 Mock tests

Teachers interviewed regarded mock tests as a useful activity to familiarise students with the test situation. Clinical teachers also felt that a mock test teaches student how to approach the assessment situation and alerts the student to assessment criteria. In such a case, the mock test was seen as a learning situation for the test and not necessarily for the attainment of learning outcomes. Some clinical teachers, however, valued the mock test for the discussion it elicits and the opportunity it gives to identify the learner's strengths and weaknesses. The value of a mock test was emphasized by a clinical teacher as: "...during the mock test, I alert the students on what they need to give more attention to, so they do not only learn about it in the assessment". Mock tests, it was stated, may also be used as a self-reflection activity for students.

5.4.7 Peer assessment

Clinical teachers had mixed feelings about peer assessment. Some clinical teachers saw peer assessment as "the blind leading the blind". Another clinical teacher also noted: "...students are very perplexed (with peer assessment), especially if it is their first time". Uncertainties also existed on how to handle the situation when academically strong and weak students are grouped together. Teachers felt that such a situation may cause undue strain. According to teachers, the value of peer assessment is determined by the way in which the situation is handled. Peer assessment is more effective if the teacher is present in the learning situation and if he/she monitors the process. A clinical teacher motivated: "I prefer to give guidance and make it a joint effort between the teacher and the student (as observer)". The student, it was motivated, who assesses the other, puts him/herself in the shoes of the assessor and thus become aware of assessment criteria. Clinical teachers also acknowledged that peer assessment might improve the students' insight.

5.4.8 Reflection and self-assessment

Although teachers admit that they do not formally use self-assessment and self-reflection as learning activities, they acknowledged that both occur through activities such as discussions and feedback. Clinical teachers felt that students may not be equipped to assess themselves properly, as self-assessment depends on the student's level of maturity: "Not all students are equally aware of their weak or strong points". The teacher should providing feedback on self-assessment to the student.

Clinical teachers agreed with the students' view on the SWOT analysis. In the experience of the clinical teachers, students complete the SWOT analysis routinely and consistently write similar comments on the SWOT analysis. Clinical teachers feel that: "the comments students write on the SWOT analysis are often too vague to interpret and warrant action". However, a clinical teacher comments on the SWOT analysis: "In this year, some students accurately identified their weak points in the SWOT analysis. I have seen students progress in this regard". The particular clinical teacher discusses the SWOT analysis with the students and encourages them to identify attainable goals and try to achieve it. The comment of the teacher emphasises that the SWOT analysis could be an effective tool for learning if appropriately applied.

5.4.9 Responsibility of the students

Clinical teachers agreed with students' views regarding responsibility towards learning in the clinical environment. Clinical teachers expected students to have an appropriate level of theoretical knowledge for the clinical placement and to use learning opportunities and participate in learning activities as part of their responsibility towards self-development.

5.4.10 Other findings

Clinical teachers acknowledged that teaching on a clinical placement normally depended on the type of clinical competency test performed at the end of the placement (assessment or treatment of a patient). Teaching-learning activities were thus planned accordingly. Assessment in this case, it seems, does not only drive learning, but also teaching.

5.4.11 The roles and attributes of the clinical teacher

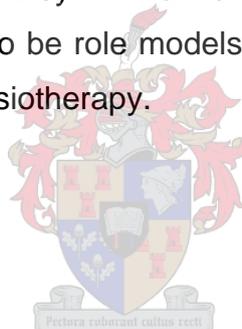
Clinical teachers valued approachability as the most important attribute of the clinical teacher. Teachers confirmed that approachability can be seen in the way they treat students. Clinical teachers state that they try to assure approachability by making it clear that they (as teachers) are available and willing to help students. It is particularly important for clinical teachers not to appear to be threatening.

It was important for clinical teachers to help the students to settle into a new clinical placement comfortably and quickly, by providing a good orientation programme. A teacher stated: "Students struggle with the largeness of Tygerberg Hospital; they struggle with the routine of the hospital situation and teamwork". This orientation programme includes clarifying the teacher's expectations from the students, and the students' expectations

from the teacher. In this respect it was also important for clinical teachers to be able to diagnose the students' strengths and weaknesses early in the clinical placement.

Other attributes mentioned by the interviewees as important include that the clinical teacher should communicate on the level of the students. Clinical teachers valued honesty ("keeping your part of the agreement with the student"). They believed it was their task and responsibility to share their knowledge and experience with students and to keep students interested in learning activities.

Clinical teachers saw themselves as role models of professionalism for patients, colleagues and students, and believed all were to be treated with dignity. It was the teachers' point of view that students should regard teachers as experts in the field. This aspect is emphasized by the following statement: "The most important thing is that the student must see you as an expert in what you are doing. If the students does not think you know what you are doing, then they will not value what you are saying or doing". It was important for clinical teachers to be role models with regard to teaching and thinking (reasoning), and as clinicians in physiotherapy.



5.5 SUMMARY OF THE CHAPTER

The information obtained from the semi-structured interviews conducted with the participants showed that the two groups largely agreed on the most valued teaching-learning activities and on the roles and attributes of the clinical teacher to enhance learning. Differences in views exist among the clinical teachers as demonstrators of patient management. Discrepancies existed between the perceived learning value and the current practice of discussions. Both parties had mixed feelings and uncertainties regarding the use of peer assessment, self-assessment and reflection as learning activities. Reflection was valued, but it was not necessarily implemented.

In the Chapters 4 and 5 the information obtained from the two data generating tools was presented and discussed. In the subsequent chapter, this information will be discussed in relation to the research question and aims as stated in Chapter 1. Some conclusions, recommendations and opportunities for further research based on the findings of the current study are included in the next chapter.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

In Chapter 6, the concluding chapter of the thesis, the results obtained by the two data-generating tools (questionnaire and semi-structured interviews) are discussed against the background of the research question as described in Chapter 1 and the literature reviewed in Chapter 2. The primary aim of the study was to determine what physiotherapy students and clinical teachers view as effective clinical education. The study focused on teaching-learning activities and the role they play in learning production to determine what constitutes quality clinical education from the perspectives of students and clinical teachers. The clinical teacher's role and attributes were also investigated to determine how they influence learning. Chapter 6 discusses the implications of the study, and draws conclusions from its findings. The Chapter also provides recommendations for practice and suggestions for further research.

6.1 DISCUSSION OF FINDINGS

6.1.1 Clinical education structure

It is important to consider the views of the participants regarding general clinical education structure as it provides a context for suggestions on teaching-learning activities. The results suggest a physiotherapy clinical education programme of six weeks per placement, with the fourth-year students working full day and the third-year students working only in the mornings (Section 4.3). It should be noted that students are already working in this suggested framework and that their responses might have been influenced by the fact that they were used to this clinical education structure. Their responses may not necessarily have reflected their preference.

In the preferred clinical education programme, the clinical teacher has an appointment with the student twice per week on the clinical placement, spending one hour to one and a half hours with each student (Section 4.3). The students elaborated on the aspect of time in the interviews, stating that in an individual teaching situation, the session could be one hour, but in a group teaching situation, the session should be one and a half hours long. In this time, specific teaching-learning activities such as demonstrations (where learning is facilitated), discussions and feedback could be performed. Sufficient time should be

allocated for clinical reasoning and synopsis of the session (Section 5.3.5 & Tables 4.2 & 4.3).

6.1.2 Collaborative learning

In student-centred clinical education, the clinical teacher would use individual learning sessions, where one student receives undivided attention (Table 4.2), as well as group teaching situations. From the results it seems that group size should not exceed four members (Figures 4.1 & 4.2). It also seems preferable that clinical teachers should create an atmosphere in which students feel free to participate actively without feeling intimidated. The findings corresponds with the student-centred paradigm where learning is active, collaborative and supportive (Bitzer in Gravett & Geysler, 2004:45).

6.1.3 Teaching and learning activities

One of the aims was to determine which teaching and learning activities physiotherapy students and clinical teachers view as effective in enhancing learning in the clinical environment. The researcher also endeavoured to generate explanations for efficacy of these teaching-learning activities. The findings emphasises the strong link between student-centred teaching and effective teaching-learning activities. As SU is committed to student-centred teaching, it is important to consider the views of students on their clinical learning experience. The participants in this study made specific reference to some teaching-learning activities and assessment strategies that they view as effective for their learning. These concur with the SU Strategy for Teaching and Learning (2001) and with the SU Assessment Policy (2004). The participants specifically referenced various kinds of demonstrations on patient management, discussion on patient management and feedback as the teaching-learning activities that are most effective in enhancing learning in the clinical learning environment. These activities should therefore form the basis of the clinical teaching program. The value of formative assessment for learning was also strongly emphasised by the participants. Formative assessment, in this case the use of simulated clinical competency ('mock') tests should form an integral part of the clinical teaching program.

Furthermore, the findings suggest a clinical education programme that follows a pathway of progressive mastery (Sections 5.3.2, 5.3.9, 5.3.11 & 5.3.12). Higgs (1993:243) described the principles of progressive mastery as task maturity. These principles have also been described by the behaviourist theorists and in the social cognitive theory of

Bandura as scaffolding (Section 2.2.2.2). In such a programme, the learning needs of the student are determined at the beginning of the clinical placement, and teaching-learning activities are planned accordingly. One form of these teaching-learning activities is the demonstration of patient management.

6.1.3.1 Demonstrations of patient management

The use of demonstrations as a teaching-learning activity appeared to be the strongest emerging theme. Figures 4.7 and 4.8 show that students and clinical teachers value demonstrations as one of the most important teaching-learning activities. This notion was confirmed in the interviews (Sections 5.3.1, 5.3.2 & 5.4.2). However, the views of the students and clinical teachers differed on the efficacy of different types of demonstrations in both the qualitative and quantitative data (Table 4.4 & Section 5.4.2). Students valued demonstrations by the teachers more than teachers did. This could possibly be explained by the fact that the teachers valued the active participation of the student, thus giving the student self-responsibility for learning. The demonstrations by the teacher are valuable, as these activities orientate the student to the specific clinical area of physiotherapy, serve as a standard for patient care, direct the students' thought processes, and facilitate clinical reasoning (Sections 5.3.2 & 5.4.2). It appears that clinical reasoning skills are facilitated when clinical teachers explain their thought processes to the students while they perform the demonstrations. In this way, the teacher acts as a role model for cognitive, affective and physical skills inherent to physiotherapy practice. This form of learning is learning by observation (vicarious learning), which is supported by the social cognitive theory of learning (Section 2.2.2.2). It also concurs with the ZDP of Vygotsky (Jarvis *et al.*, 2003:37), as the student is interacting with a more knowledgeable other (the teacher).

Student respondents prefer that demonstrations in the clinical education programme to move from dependent to independent demonstrations (Section 5.3.2). The responsibility of performing a demonstration of patient management is thus expected to be gradually handed to the student. It is suggested that when the student is new to the clinical placement, the clinical teacher perform the demonstration. Thereafter; the student is expected to perform the demonstration, with appropriate guiding/facilitation from the teacher. This concurs with the view of Paschal (in Shephard and Jenson, 1997:82) and Higgs (1992:824) who advocates the move from assisted to self assisted learning.

Students apparently learn the most when they present demonstrations of patient management to the teacher (Table 4.4). Such demonstrations are valued, as they provide the opportunity for the teachers to identify students' strengths and limitations and to provide feedback on the students' clinical reasoning and performance of techniques. Demonstrations also facilitate self-assessment and the development of communication skills amongst students (Sections 5.3.2 & 5.4.2). The student learns more in this social situation with the teacher than in an isolated situation (Section 2.2.2.2). In the previous section, the way in which students may learn through observation, was discussed. The findings indicate that learning by doing was important for the participants. This corresponds with enactive learning in the social cognitive theory of Bandura (1986, in Schunk, 2004:100). The role of the teacher is then to provide corrective feedback to help students to improve their skills (see Section 2.2.2.3). Facilitation of learning by the teacher during demonstrations is thus vital. In this framework, performing a demonstration is active learning (Barr & Tagg, 1996:16) with the student actively constructing meaning.

Students also value their role as observers when another student performs a demonstration. They did not mind the presence of other students as observers during their own demonstration with the teacher (Table 4.4 & Section 5.3.2). By observing peers, students obtain a variety of input on the patient case; they learn from each other; they identify the mistakes as the same mistakes they might have made. This activity also improves students' observation skills (Section 5.3.2).

It is not surprising that both clinical teachers and students value demonstrations as one of the most important teaching-learning activities contributing to learning, as the structure of demonstration is almost identical to the clinical competency test. The principle of constructive alignment, which is said to facilitate deep learning (Biggs, 1999:26), is thus advocated. Outcomes-based education would also be advocated by the use of demonstrations as teaching-learning activities are planned according to learning outcomes (Harden *et al.*, 1999:9). Clinical competency as an outcome of clinical education is taught via demonstration (with appropriate facilitation of learning, feedback and discussion) and is assessed via the clinical competency test.

It can be concluded that the demonstration of patient management is an effective teaching-learning activity in the clinical education of physiotherapy students. Both qualitative and quantitative results supported the notion that students learn most from

demonstrations. The clinical education programme should thus be planned to include various kinds of demonstration of patient management as suggested in the accounts of interviewees.

6.1.3.2 Feedback

Figures 4.7, 4.8, 4.9 & 4.10 indicate that students and clinical teachers regarded feedback as another important teaching-learning activity. In the interviews, participants distinguished between feedback during demonstrations and feedback in general.

(i) Feedback during demonstration of patient management

Clinical teachers and students value feedback during demonstrations (Table 4.4). The process of giving feedback during a demonstration, however, elicited a variety of opinions, especially amongst students, during the interviews (Section 5.3.3). While clinical teachers and some students preferred immediate feedback during the demonstration, some students preferred that the clinical teacher wait until a section of the demonstration be completed before giving feedback. In this way, the teacher does not interrupt the thinking processes of the students and thus affords the students the opportunity to assess themselves and rectify mistakes (Section 5.3.3; Kilminster & Jolly, 2000:830). The implication is thus that the clinical teacher should clarify when a particular student prefers feedback during the demonstration. However, the teacher should immediately intervene when unsafe practice is observed, to ensure the safety of the patient (Section 5.3.3).

(ii) Feedback in general

General feedback on the students' progress on the clinical placement is valued as it can motivate the students and boost self-confidence, especially if the feedback is positive (Section 5.3.10). Feedback also alerts the students to specific aspects they need to work on, thereby directing learning (Section 5.3.4 & 5.4.5). This type of feedback is important for its formative value (Geysers in Gravett and Geysers, 2004:94)

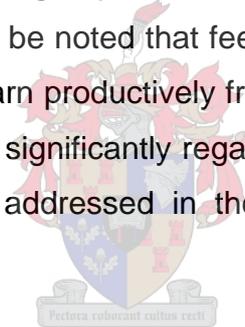
Students preferred balanced feedback (positive and negative feedback), and clinical teachers agree with this notion (Table 4.6; Sections 5.3.4 & 5.4.5). Students particularly value verbal feedback (Table 4.6). Students value specific feedback, especially on skills (Table 4.6; Sections 5.3.4 & 5.3.11). Interviewees observed two factors influencing the interpretation of feedback, namely *how* feedback is given and the nature of the relationship

between the clinical teacher and the student (Sections 5.3.3, 5.3.4 & 5.4.5). Williams & Webb (1994:1) agree with the latter notion.

Next to demonstration of patient management and discussion, feedback is one of the three most important teaching-learning activities for the participants. Clinical teachers in physiotherapy should be alerted to the powerful learning effect positive and negative feedback has on learning if it is given in a proper manner.

6.1.3.3 Discussion

Students and clinical teachers valued discussion as one of the most valuable teaching-learning activities (Figures 4.7 & 4.8). Physiotherapy students in a study by Babyar et al. (2003:230) found discussions to be the most effective activity to facilitate clinical reasoning. Students especially learnt a great deal from individual discussions with the teacher where individual attention is given to one student (Table 4.5 & Figure 4.7). Clinical teachers, on the other hand, valued group discussion and individual discussion equally (Table 4.5 & Figures 4.8). It should be noted that feedback can also be seen as a type of discussion. Students seemed to learn productively from X-Ray discussions. The views of clinical teachers and students differ significantly regarding case presentations (Table 4.5). As this topic was not specifically addressed in the interviews, further investigation is needed.



In the interviews, students elaborated on discussion after a demonstration and general discussion on patient management. Students emphasised the importance of having a discussion after a demonstration of patient management (Section 5.3.5). Participants in the study felt that these discussions facilitate problem solving and clinical reasoning. This activity also links theory to practice and it is a useful tool for self-assessment and reflection (Sections 5.3.5 & 5.4.3). The findings concur with Gross Davis' (2001:63) views on discussion. Although the importance of discussions after a demonstration is emphasised, both teachers and students acknowledged that not enough time is allocated for this type of discussion (Sections 5.3.5 & 5.4.3).

Students identified group discussions on general patient management as an important teaching-learning activity (Section 5.3.5). In this weekly discussion, students were able to discuss problem cases and gain a variety of input from other students and the clinical

teacher. These collaborative discussions aided in self-assessment, clinical reasoning skills and the facilitation of communication skills (Section 5.3.5).

Different types of discussion were one of the three most important teaching-learning activities. Discussion after a demonstration was particularly important for students. This indicates that in planning a demonstration, enough time should be allocated for discussion.

6.1.3.4 Mock tests/simulated clinical competency assessment

Of all the assessment options given in the questionnaire, participants in this study regarded a formative assessment tool, namely the use of mock assessment, as the most valuable for learning (Table 4.7). The reason for the above is probably that the mock test is a simulation of the actual clinical competency test. In the quantitative part of the study, students rated mock tests as one of the five most important teaching-learning activities. This was not the case with clinical teachers (Figures 4.7 & 4.8, & Table 4.7).

In the interviews, the same trend emerged with students generally having been more positive towards the learning value of mock assessments. Clinical teachers valued mock assessment, but not as much as students did (Sections 5.3.7 & 5.4.6). The value of mock assessments as a teaching-learning activity is twofold. Mock tests were valued as preparation for the actual clinical competency test, alerting students to the assessment criteria for the test and for familiarising students with the procedure for the test (Sections 5.3.7 & 5.4.6). The student, using only a strategic approach to learning (Entwistle in Knight, 1995:101) would probably consider the preparatory value of the mock assessment as very important.

Mock assessment was also considered for its learning value in attaining the outcomes for the clinical education programme. Mock assessment may help students to identify their limitations, thereby guiding remedial action. Students acknowledged the valuable feedback they receive after a mock assessment. It facilitated discussion, coaching and self-reflection (Sections 5.3.7, 5.4.6; Rolfe & McPherson, 1995:837). The student using a deep approach to learning (Entwistle in Knight, 1995:101) would probably consider the formative value of the mock assessment as very important. Mock assessment, as a simulated clinical competency test, could also be seen as reinforcing constructive alignment (Biggs, 1999:26) between the outcomes of the module, teaching-learning activities and assessment.

The findings of the study confirm the notion that assessment drives learning and that assessment is a powerful tool in learning (Assessment Policy, 2004:2), as it became apparent that how and what students learn is powerfully influenced by how they are going to be assessed (Section 5.3.7). The motivation for learning is less after summative assessment and students attributed a high learning value to mock assessment. Clinical teachers reinforced this notion by stating that teaching-learning activities are planned according to the type of clinical competency test to be performed (Section 5.4.10).

Mock assessment, as the fourth most valuable teaching-learning activity, appears to be an effective teaching-learning activity to facilitate clinical competency. It could become the ideal activity to drive learning through practice if combined with feedback and discussion.

6.1.3.5 Peer assessment

The use of peer assessment elicited a variety of responses (both positive and negative) amongst the participants in the study, indicating that participants had mixed feelings about this aspect. Most participants felt unsure about the learning value of peer assessment (Sections 5.4.7 & 5.3.8). Reasons for this notion centred on uncertainty of assessment criteria amongst students, students not trusting each other's judgements, personal factors (difficulty judging peers) and the possibility of strain amongst students due to peer assessment. However, peer assessment was considered valuable for learning as it was seen to improve observation skills and insight (Section 5.4.7). It also helped the students to identify mistakes and could alert them to assessment criteria (Section 5.3.8). Peer assessment, participants felt, is more acceptable if the clinical teacher is present to guide and monitor the process (Section 5.4.7). Brew (in Brown and Glasner, 1999:160) alerted to the advantages and disadvantages of peer assessment.

Although the value of peer assessment as a teaching-learning activity in enhancing learning was questioned by the participants, one should not discard it. Much of the critique on peer assessment could be eliminated with proper education and explanation. It is possible that if the practice of peer assessment were adapted, different learning values would be attributed to it.

6.1.3.6 Reflection and self-assessment

Students gave a low rating for reflection as a teaching-learning activity, in contrast to clinical teachers (Figures 4.7 and 4.8). More specific questions on reflection elicited

similar responses, with the difference between clinical teachers' and students' views on reflection as a teaching-learning activity being statistically significant (Table 4.4 & 4.8). Participants' responses regarding the construct of self-assessment followed the same trend, as average learning values were attributed to self-assessment (Tables 4.8(g), 4.7(a) & 4.7(f)).

In the interview, it was difficult to distinguish between reflection and self-assessment as teaching-learning activities. This is probably because self-assessment involves reflection (Brew in Brown and Glasner, 1999:160). Nonetheless, interview results strengthened the findings of the questionnaire results. In the interview, participants acknowledged the limited use of reflection. This acknowledgement probably explains the low learning value attributed to reflection. It could be that reflection was not used optimally or was not named as a formal teaching-learning activity. As can be seen from comments on discussion and feedback, reflection and self-assessment occurred within discussion and feedback. Reflection is valued as it helps students to plan for the future by analysing the current situation (Section 5.3.6). Uncertainty about reflection exists due to the perceived limited self-knowledge of students, thereby influencing the trustworthiness of reflection/self-assessment (Sections 5.3.6 & 5.4.8). The value of reflection as a meta-cognitive strategy is clear in the literature (Kappel & Dayley, 2004:83; Brew, in Brown and Glasner, 1999:160; Higgs, 1992:824) as creating meaning from experience. Yet the participants did not experience reflection in this way.

In the interviews, students and clinical teachers commented specifically on the self-assessment tool (SWOT analysis) that was being used at that time. Interviewees questioned the validity of the SWOT analysis as a learning tool (Section 5.3.6). Clinical teachers also realised that the SWOT analysis was not being implemented to its full effect (Section 5.4.8). To enhance the learning effect of the SWOT analysis, clinical teachers and students should discuss the students' SWOT analysis, while planning learning goals and activities that relate to the SWOT analysis (Section 5.3.6). The SWOT analysis is thus transformed into a learning contract. Limited evidence, in the experience of a clinical teacher, suggests that such a system could work (Section 5.4.8).

Reflection was one of the four most valuable teaching-learning activities for clinical teachers, but not for students (Figures 4.7 & 4.8). Perhaps reflection and self-assessment occurred without students realising it. The use and value of reflection and self-assessment

should thus be emphasised in the clinical education programme to enhance awareness of its importance amongst students.

6.1.3.7 Responsibility for learning

Participants in the study agreed that students and teachers should share the responsibility for learning (Tables 4.6(a) & 4.6(f)). Students and teachers did not think it is wise for students to manage their own learning (Figures 4.9 & 4.10), further strengthening the notion of students and teachers as co-producers/constructors of knowledge. Qualitative data indicated that both groups of participants view it the students' responsibility to have an appropriate level of theoretical knowledge and proficiency in practical techniques relevant to the clinical areas. Students' responsibility was also identified as using all learning opportunities optimally and participating in learning activities. Higgs (1992:822) and Pintrich (1995:825) recognise self-directed learning as the ability to take responsibility for own learning. However, Higgs (1992:824) warns that students need to be mature enough to take responsibility for learning, which could support the view of shared responsibility for learning in this case.

6.1.4 Teaching and learning strategies

The clinical teachers and students largely agreed on teaching-learning strategies that enhance learning in clinical education. Linking theory to practice was as seen as very important for enhancing learning by students and teachers (Figures 4.9 & 4.10). In the interview it became apparent that demonstrations on patient management and discussion as teaching-learning activities are particularly suitable to link theory and practice (Sections 5.3.2, 5.3.5 & 5.4.2). It is important for clinical teachers to link theory to practice (Kilminster & Jolly, 2000:843; Paschal, in Shepherd & Jenson, 1997:181). Several students in the interview indicated that they struggle to connect theory and practice, and stated that they still thought in boxes, which they could not integrate (Section 5.3.2). This problem is not unique to physiotherapy. Steward (1996, in Strohschein *et al.*, 2002:163) found that occupational therapy students perceived an inconsistency between theory and practice, failing to make connections between coursework and clinical practice, between different areas of practice and between different forms of knowledge.

Facilitating clinical reasoning, problem solving and guidance on patient management was also seen as important teaching-learning strategies. These strategies may be facilitated successfully within demonstrations, discussion and feedback, as identified in the interview

results (Sections 5.3.2, 5.3.3, 5.3.5, 5.4.2 & 5.4.3). The clinical teacher giving constructive feedback has also been identified as one of the most important teaching-learning strategies (as discussed in Section 6.1.3.2). These findings are supported by the comments of radiography students in Williams & Webb (1994:8).

In the clinical education programme, teachers need to take cognisance of the important teaching-learning strategies. These may be easily integrated with various teaching-learning activities.

6.1.5 The clinical teacher

6.1.5.1 Roles of the clinical teacher

From the results of the questionnaire, it is clear that the students and clinical teachers largely agreed on the role of the clinical teacher (Figures 4.3 & 4.4). Differences, however, existed in the role of the teacher as technique demonstrator, role model and knowledge provider.

The discrepancy in the role of the teacher as technique demonstrator could be explained by the views of the students and clinical teachers as elicited in the interviews. The view of clinical teachers was that students should be able to perform basic techniques in a clinical setting, as it has already been taught in practical laboratories (Section 5.4.1). Teachers did not see clinical practice as the ideal place to teach techniques. The explanation could possibly be that students would like the teachers to demonstrate adaptations to the technique specific to the patient and his/her condition. Furthermore, students realised that it is their responsibility to be prepared for the clinical placement by being able to perform the basic techniques effectively. However, it is a concern that they admitted to not adhering to this responsibility (Section 5.3.11). One will need to investigate the reasons why this is occurring, as teaching and learning of basic techniques is clearly not the aim of the clinical education programme as stated in the outcomes and as identified by the clinical teachers (Sections 2.1.2 & 5.4.1).

There seems to be a conflicting role of the teacher as provider of information and knowledge, and yet at the same time as facilitator of self-responsibility for learning. (Figures 4.3 & 4.4 & Table 4.8b). The teacher as knowledge provider was not discussed

in the interviews, but Harden & Crosby (2000:5) possibly offer a stance that could explain the students' point of view. They state that the teacher as knowledge provider takes on a completely new meaning in the clinical context. Instead of providing knowledge by delivering it to students (e.g. lecture), the teacher in the clinical context shares knowledge relating to the specific condition the patient might have. This situation creates a powerful context for learning due to the immediate relevance of that knowledge. The teacher thus selects, organises and delivers this relevant clinical information.

The discrepancy in votes for the clinical teacher as role model (Figures 4.3 & 4.4) as one of the most important roles could be twofold. One is that the learners underestimated the powerful role the teacher as role model has on their learning. Secondly, the teacher as role model may have been seen as being incorporated in other roles of the teacher. Nonetheless, the literature is clear on the powerful effect the teacher as a role model has on learning (Parsell & Bligh, 2001:411; Taylor & Dean Care, 1999:6; Harden & Crosby, 2000:6; Bandura, 1986 in Schunk, 2004:84). However, student and teacher interviewees acknowledged that modelling is in fact powerful in teaching and learning. Students and clinical teachers saw the teacher as a powerful role model, especially in the areas of communication with the patient, caring for the patient and knowledge (Sections 5.3.12, 5.3.2, 5.4.2 & 5.4.11). What becomes clear is that the clinical teacher is seen as a role model not only as teacher, but also as health care provider. Students do not only observe the teacher's attitude and skills toward teaching, but also in the way the clinical teacher manages the patient in a holistic manner (Sections 5.3.12, 5.4.11; Harden & Crosby, 2000:6).

Participants agreed upon the role of the teacher as assessor/evaluator (Figures 4.3 & 4.4). Harden & Crosby (2000:9) agree that the teacher as assessor of learning is an integral and important role of the clinical teacher. In the interviews, some students reported that this role of the teacher as assessor could have detrimental effect on a student's learning process as well as on the atmosphere of learning (Section 5.3.12). The finding above emphasises the clinical teacher's responsibility towards creating an open atmosphere of trust, where students can learn from their mistakes in the clinical milieu. Hewson (2000:163) confirms this notion.

The five most important roles of the clinical teacher that emerged from the study are: facilitator of learning, mentor, assessor/evaluator, technique demonstrator and role model.

Clinical teachers' awareness of these roles might also be accompanied by the realisation that some of these roles may be conflicting. Clinical teachers should thus be prepared to manage these conflicting roles within the clinical learning environment to ensure quality clinical education, and they must be assisted in doing so.

6.1.5.2 Attributes of the clinical teacher

Cross (1995:509) identified approachability as the most important attribute of the clinical teacher. The findings from the questionnaires and the interview confirm this (Figures 4.5 & 4.6, Sections 5.3.12 & 5.4.11). The participants understand approachability to mean the creation of a learning atmosphere where students are free to ask questions without feeling threatened. This is confirmed by Hewson (2000:163) who states that an appropriate learning climate is one that is risk free. Approachability needs to be affirmed in the clinical teacher's verbal and non-verbal communication (Sections 5.3.12 & 5.4.11).

Another strong theme emerging from both the quantitative and qualitative data is the importance of the communication skills of the clinical teacher (Figures 4.5 & 4.6, Sections 5.3.12 & 5.4.11). This communication should be at an appropriate level. Good communication is also seen as relating to feedback, trustworthiness and clinical teachers sharing their knowledge and experiences with the students (Sections 5.3.12 & 5.4.11). Good communication as one of the most important attributes is supported by the findings of Onuoha (1994:208) and Cross (1995:509).

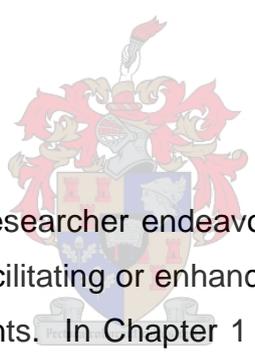
Students regarded it as important that clinical teachers recognise the ability of students (Figure 4.5). One of the main findings of a study on nursing students done by Chan (2001:450) is that students want to be recognised for their abilities and contribution to patient care. In the interview data recognition of abilities is described as teachers not dominating learning sessions, but facilitating learning sessions, giving the student the opportunity to explore (Section 5.3.12). A dominant clinical teacher who takes over procedures inhibits initiative and decreases motivation (Williams & Webb, 1994:1). Clinical teachers' recognition of students' abilities, expressed through giving positive feedback, have a powerful effect on the motivation of students (Section 5.3.10). Some students also strongly emphasised that the clinical teacher should identify peers who are struggling on clinical placement early. These students should receive special attention (Sections 5.3.12 & 5.3.9).

The results thus confirm the findings of Chan (2001:450), Hewson (2000:163) and Biggs (1999:65) that the clinical teacher plays an important role in establishing an environment and atmosphere that is conducive to learning. Clinical teacher attributes that play an important role in this regard have been identified as approachability, good communication, recognising students' abilities, and respecting and supporting the student. Approachability was the most important attribute. The importance of these personal factors should be emphasised within a clinical education training programme for teachers. This would help to clarify expectations.

6.1.6 The role of the patient

An interesting finding that has emerged is the powerful role the patient plays in the learning experience of student. The patient has been identified as not only supplying a context for the learning event, but also as being a powerful motivator and facilitator of self-directed learning (Section 5.3.10).

6.2 RECOMMENDATIONS

A faint watermark of a university crest is visible in the background of the text. The crest features a shield with various symbols, topped by a crown and flanked by two figures holding a banner.

At the inception of the study, the researcher endeavoured to investigate which teaching-learning activities are effective in facilitating or enhancing learning in the clinical education programme of physiotherapy students. In Chapter 1 of the thesis, it is postulated that in answering the above aspects, one might be able to determine some aspects of what students and clinical teachers view as student-centred clinical education. A better understanding of what constitutes student-centred clinical education from the students' and teachers' perspective was thought to be valuable in providing better educational experiences. Physiotherapy students and clinical teachers were afforded the opportunity to communicate which teaching-learning activities they valued and also to state why they valued those teaching-learning activities. In doing so, the participants of the study contributed to what they viewed as a student-centred clinical educational programme. The Physiotherapy department should thus take the views of the students and clinical teachers into account when planning the clinical education programme, as they are major role players in the programme.

The clinical education programme should thus follow a programme of progressive mastery, where responsibility is gradually given to the student in a clinical placement. It has also

been suggested that, at the beginning of each clinical placement, the clinical teacher and the student should set up a learning contract for the individual student. The student's learning needs and level of competence, together with the specified outcomes for the clinical placement, should be taken into account in setting up a learning contract. The SWOT analysis would be a useful tool in diagnosing the student's strengths and limitations. Limited evidence also suggests that a preparatory, formative test before each clinical rotation could also help to identify problems the student may have. Teaching-learning activities should then be planned accordingly.

Teaching-learning activities in the preferred clinical education programme should consist of demonstrations of patient management in a group and/or individual sessions. In the first week of the clinical placement, learning is optimal if the teacher presents the demonstration. Thereafter, the student should present the demonstration with appropriate facilitation/guidance from the clinical teacher. After the demonstration, time should be allocated for discussion of the demonstration. The discussion should consist of linking theory and practical, clinical reasoning and reflection on the learning experience. Other teaching-learning activities, such as mock clinical competency assessment, should be included in the clinical education programme for its formative value. Peer assessment and self-assessment may be used under the guidance of the clinical teacher. Weekly discussions on general patient management should also be implemented as these activities facilitate discussion. The suggested clinical education programme for a clinical placement, based on the findings of the study, is attached as Appendix I.

Demonstrations of patient management have been found to be the most useful/valuable activity to facilitate learning in the clinical milieu. It is thus suggested that demonstrations form a central part of the clinical education programme. However, demonstrations cannot exist in isolation, but should be complemented with feedback and discussion of the demonstration as feedback and discussion were found to be second and third most valuable learning activities. This notion has implications for the planning of a demonstration as a teaching-learning activity. In this regard, the learning cycle of Kolb (Section 2.2.2.2) should be advocated. A demonstration (as concrete experience) should be followed by feedback (reflective observation) and discussion (abstract conceptualisation). New situations could thus be handled more comfortably (active experimentation).

The findings suggest that formative assessment is indeed a powerful learning tool. The current practice of formative assessment in the clinical education programme should be reassessed, adapted and formalised to be made more student-centred. New formative assessment tools could be developed. A suggestion for such a formative assessment event could be the inclusion of formative technique tests in the clinical education programme, as students requested more feedback on their proficiency with regard to techniques.

The principles of constructive alignment and outcomes-based assessment are strengthened by the findings of the study. Teaching-learning activities and assessment events should be planned according to the outcomes of the Clinical Physiotherapy module.

It has been confirmed that the clinical teacher plays a central role in the clinical learning experience of the student. Clinical teachers should be made aware of the powerful role they play in student learning. This role goes beyond the mere provision of teaching-learning activities, and extends to personal and professional factors.

The findings may guide the clinical education training programme for clinical teachers. It may do so by providing guidelines on clinical teaching-learning activities seen as effective in enhancing learning in the clinical milieu. By suggesting a clinical education programme as described above and by providing guidelines for teaching-learning activities, clinical teaching may be made more consistent. It may also aid in providing some sense of equality in the clinical education of students. This aspect of equality is important as Cross (1995:506) states her causes for concern in clinical education as inconsistency and inequity of students' learning experiences, lack of validity and reliability in assessment, varying standards of clinical teaching, and varying time devoted to clinical education of different students.

Physiotherapy students should be made more aware of teaching-learning activities, especially of the use and value of reflection and taking responsibility for learning. Expectations clinical teachers have of students and vice versa may be clarified through this process. When students know what is expected of them, it may help them to prepare for the clinical placement. Students may also be motivated when they realise that the clinical education programme is student-centred. However, students should understand their role and responsibilities as co-creators of meaning in such a programme.

In order to ensure a student-centred teaching and learning ethos, the principles of the student-centred learning paradigm should be adhered to. The findings elaborate on what student-centred teaching in clinical education entails. In the student-centred clinical education programme, students should be allowed to be explorers and co-creators of learning in a non-threatening environment. Opportunities should be created where all students may actively participate in teaching-learning activities. The clinical milieu in itself provides a powerful learning environment. However, the role of the clinical teacher in creating a powerful learning environment should not be underestimated. Success for diverse students could be improved by considering the learning styles of students. A variety of learning experiences and assessment strategies should be employed as discussed above. The variety of learning experiences also includes learning in a collaborative as well as in an individual learning session. Learning should be co-managed by students.

6.3 OPPORTUNITIES FOR FURTHER RESEARCH

In Chapter 3, the researcher typified the study as a case study, in view of its nature. An in-depth study with a very specific focus on clinical education of physiotherapy students at one university was carried out. The very nature of the case study makes it ideal to serve as a pilot study for a more extensive research project. It is thus suggested that the study be followed up with a nationwide study, including all the physiotherapy education departments in South Africa. It is particularly important to investigate clinical education in physiotherapy, especially relating to teaching-learning activities used, as limited research has been done on this aspect. An international study on the same topic should not be excluded, as it could foster collaboration amongst educators in the field of physiotherapy.

Specific areas that focus on ensuring quality in the clinical education programme, and that need to be further investigated have been identified. Participants' view of preferred practice in clinical education has been investigated and could be extended by comparing preferred practice and actual practice. Such a study would be useful in quality management of the clinical education programme. Several clinical teachers participants showed interest in investigating clinical education. These teachers suggested that the specific barriers to learning in the clinical education programme should be investigated.

Clinical teachers felt it is important to know which factors inhibit learning, in order to eliminate these factors in ensuring learning quality. It could also be advisable to investigate different clinical placements in terms of factors that influence the clinical learning environment. The clinical education programme needs to be evaluated on an ongoing basis, as this is a way of pointing out the strengths and weaknesses of the system. Areas needing improvement can thus be identified. Such a study could therefore guide adjustments in clinical placements (for example facilities/equipment available) in reaching some sense of equality amongst clinical placements.

Further studies could also focus on assessment and learning in the clinical context. Such studies could focus on the influence the clinical teacher as facilitator and assessor of learning has in the learning process. It has already been identified that the dual role of the clinical teacher influences the learning process and the learning atmosphere. More detailed investigations are needed to determine to what extent the twofold role influences clinical teachers and students. More research into the role of assessment (both formative and summative) on learning is advised.

In the extension of the theme of the use and efficacy of teaching-learning activities in physiotherapy clinical education, specific attention needs to be given to developing teaching-learning activities that could foster the facilitation of clinical reasoning and of linking theory to practice. Both clinical teachers and students identified these two factors as priorities. They are important for the achievement of clinical competence. Students also identified that they struggle to link theory to practice. Further research could aid in understanding the process of learning in this regard and consequently in setting up suitable teaching-learning activities. In this regard, recent research has identified the need for evidence-based practice in clinical physiotherapy. Strategies will have to be devised to foster evidence-based practice amongst physiotherapy practitioners and students. The student-centredness of other modules in the Physiotherapy undergraduate programme needs to be assessed as these modules lay the foundation for the Clinical Education programme.

6.4 CONCLUDING COMMENTS

Clinical education is an important and distinct part of health care education. It is during clinical experience that students must consolidate theory and put it into practice. In the current changing context of higher education, all spheres of education (including the clinical education) need to be assessed to determine what student-centeredness means and to ascertain whether it is achieved. The primary aim was to investigate what physiotherapy students and clinical teachers at Stellenbosch University view as effective clinical education. The researcher specifically investigated teaching-learning activities and the role the clinical teacher plays in learning production to gain an understanding of what constitutes quality clinical education according to these stakeholders.

The results indicate that, in a physiotherapy student-centred clinical education programme, a progressive mastery programme is advisable. In such a programme responsibility for learning is gradually given to the student. Focus should be on promoting problem solving, clinical reasoning, physical skills development and communication skills. Teaching-learning activities promoting such skills include the use of different types of demonstration and discussion as well as appropriate feedback and formative assessment. The clinical teacher plays and will continue to play an important role in creating the context and atmosphere conducive to productive learning.



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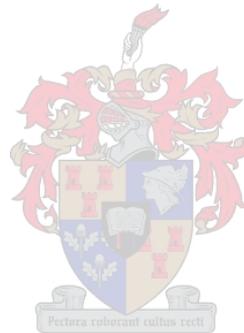
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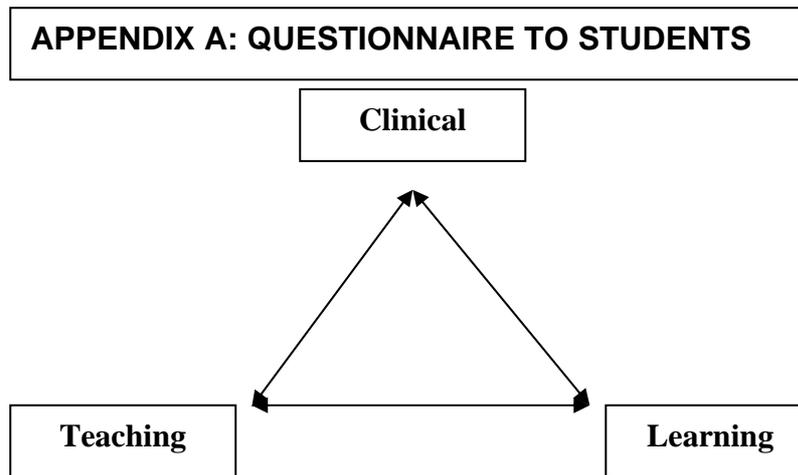
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CLINICAL EDUCATION IN PHYSIOTHERAPY

Title

Effective Clinical Education in Physiotherapy: Learners' and Clinical Teachers' views at Stellenbosch University.

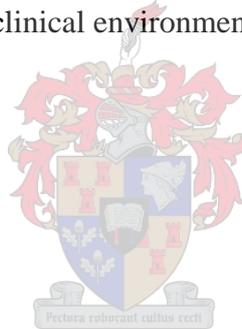
Aim:

To determine what Physiotherapy learners and clinical teachers view as effective educational strategies to enhance learning in the clinical environment.

Researcher: Dawn Ernstzen

Tel: 084 581 0693 or 021 938 9497

Fax: 021 931 1252



Description of terms used:

Clinical Teacher: All Physiotherapists involved in the clinical learning experience of Physiotherapy students.

Teaching/Learning activities: Activities that the teacher uses, with the aim of enhancing learning.

Important: Has a considerable effect on the learning process.

Facilitation: The teacher helps the learner to discover knowledge and to take ownership of learning.

Clinical reasoning: The cognitive processes (thinking) used in the evaluation and management of a patient.

Problem solving: Steps involved in working toward a solution.

This study is financially supported by The Fund for Research and Innovation in Learning and Teaching (FIRLT), Centre for Teaching and Learning, Stellenbosch University.

A. For the following categories, CHOOSE THE FIVE (5) THAT YOU PREFER THE MOST by marking the corresponding line.

1. Please choose the five roles that you regard as the most important for the clinical teacher:

- (a) Mentor _____
- (b) Friend _____
- (c) Technique demonstrator _____
- (d) Facilitator of learning _____
- (e) Role model _____
- (f) Questioner _____
- (g) Assessor/Evaluator _____
- (h) Knowledge provider _____
- (i) Reflector _____
- (j) Counsellor _____
- (k) Other? Please specify _____

2. Please choose the five attributes of the clinical teacher that you regard as necessary for optimal learning:

- (a) Respects the student _____
- (b) Supports the student _____
- (c) Good Communication _____
- (d) Approachability _____
- (e) Enthusiasm _____
- (f) Not prejudiced _____
- (g) Organised _____
- (h) Interpersonal skills _____
- (i) Listener _____
- (j) Self confident _____
- (k) Shows concern for student _____
- (l) Gives recognition for student abilities _____
- (m) Other? Please specify _____

3. Please choose five of the following teaching/learning activities in which you learn the most in clinical:

- (a) Demonstrations _____
- (b) Feedback _____
- (c) Questioning _____
- (d) Reflection _____
- (e) Peer assessment _____
- (f) Mock assessment _____
- (g) When I am coached _____
- (h) Lectures _____
- (i) Group learning sessions _____
- (j) One to one learning sessions _____
- (k) Learning on my own _____
- (l) When learning is facilitated _____
- (m) Discussion with peers _____
- (n) Discussion with the teacher _____
- (o) Clinical tasks _____
- (p) Other? Please specify _____

4. Please choose five of the following teaching/learning strategies in which you learn the most in clinical:

A good clinical teacher:

- (a) Gives constructive feedback _____
- (b) Links theory to practice _____
- (c) Promotes learner participation _____
- (d) Teaches according to student needs _____
- (e) Facilitates documentation skills _____
- (f) Allows student to take initiative _____
- (g) Gives guidance on patient management _____
- (h) Gives guidance on assessment of priorities _____
- (i) Facilitates evidence based practice _____
- (j) Facilitates problem solving _____
- (k) Familiarises the student with assessment procedures _____
- (l) Facilitate clinical reasoning _____
- (m) Let student manage own learning _____
- (n) Other? Please specify _____

5. When do you think you learn more? (Please choose only one of the two given options)

(a) Clinical teaching on a one:one (individual) basis	
(b) Clinical teaching in a group situation	

6. In your opinion, what is the ideal number of group members in a group teaching session in clinical? Please circle your choice below.

1 2 3 4 5 6 7 8 9 10 11 12

7. Please motivate your answer for question 6.

8. How many times per week would you like an appointment with your clinical teacher?

9. How long should such an appointment with your clinical teacher be? _____

10. Would you prefer your clinical hours to be a full day or half day? (please underline)

11. How long do you prefer a clinical block to be? _____ Weeks.

12. Are you Male or Female? (please underline)

13. How old are you? _____ years.

14. Which, if any, of the following parts of clinical education should more attention be paid?

Please mark the corresponding line.

- (a) The interview of the patient _____
- (b) Planning the physical examination _____
- (c) The physical examination of the patient _____
- (d) Interpretation of assessment procedures _____
- (e) The treatment of the patient _____
- (f) Re-assessment of the patient _____
- (g) The progression of treatment _____
- (h) Problem solving _____
- (i) Clinical reasoning _____
- (j) Self-evaluation on clinical abilities _____
- (k) Time management _____
- (l) Other? Please specify _____

B. Please rate how much you learn from the following TEACHING/LEARNING ACTIVITIES in clinical on a scale of 1 to 5, by circling your choice:

1. I learn an extreme amount
2. I learn a lot
3. I learn a reasonable amount
4. I learn a minimal amount
5. I learn nothing

TEACHING/LEARNING ACTIVITY 1: Patient centred activities

How much do you learn?

1.1 The teacher demonstrates patient evaluation/treatment	1	2	3	4	5
1.2 The teacher observes the clinical practice of the student and gives comments	1	2	3	4	5
1.3 The student demonstrates patient evaluation/treatment and the teacher facilitates the process	1	2	3	4	5
1.4 The student observes another student during clinical practice	1	2	3	4	5
1.5 The teacher facilitates reflection after a demonstration	1	2	3	4	5
1.6 The student completes a patient documentation form	1	2	3	4	5
1.7 Routine evaluation/treatment of the patient by the student	1	2	3	4	5



TEACHING/LEARNING ACTIVITY 2: Discussion

How much do you learn?

2.1 The teacher does a one to one tutorial with the student	1	2	3	4	5
2.2 The student participates in small group discussion on patient management	1	2	3	4	5
2.3 The student participates in a X-Ray discussion	1	2	3	4	5
2.4 The student is tutored by a fellow student	1	2	3	4	5
2.5 The student participates in a ward round	1	2	3	4	5
2.6 The student presents a case study to fellow students and staff	1	2	3	4	5

TEACHING/LEARNING ACTIVITY 3: Feedback to the student

How much do you learn?

3.1 The teacher gives verbal feedback about clinical practice	1	2	3	4	5
3.2 The teacher gives written feedback about clinical practice	1	2	3	4	5
3.3 The teacher gives immediate feedback	1	2	3	4	5
3.4 The teacher gives feedback on what the student did well	1	2	3	4	5
3.5 The teacher gives feedback on the student's limitations	1	2	3	4	5
3.6 The teacher gives feedback on the student's limitations and strengths	1	2	3	4	5
3.7 The teacher gives feedback on the student's knowledge	1	2	3	4	5
3.8 The teacher gives feedback on the student's skills	1	2	3	4	5
3.9 The teacher gives feedback on the student's attitudes	1	2	3	4	5

B. Please rate how much you learn from the following TEACHING/LEARNING ACTIVITIES in clinical on a scale of 1 to 5, by circling your choice:

1. I learn an extreme amount
2. I learn a lot
3. I learn a reasonable amount
4. I learn a minimal amount
5. I learn nothing

TEACHING/LEARNING ACTIVITY 4: Student Assessment

How much do you learn?

4.1 The student assesses him/herself on patient management	1	2	3	4	5
4.2 The student is assessed by other students on patient management	1	2	3	4	5
4.3 The student is assessed by the patient regarding patient care	1	2	3	4	5
4.4 The teacher assesses the student using a mock test situation	1	2	3	4	5
4.5 The teacher assesses the student on the end of block test	1	2	3	4	5
4.6 The student assesses his/her own learning	1	2	3	4	5

TEACHING/LEARNING ACTIVITY 5: Other

How much do you learn?

6.1 The teacher allows the student to share responsibility for learning during clinical	1	2	3	4	5
6.2 The teacher gives a lecture on patient management	1	2	3	4	5
6.3 The students does role-play about clinical practice	1	2	3	4	5
6.4 The student observes surgery	1	2	3	4	5
6.5 The student observes a video on patient management	1	2	3	4	5
6.6 The student and teacher plans learning activities for clinical together	1	2	3	4	5
6.7 The student draws up a SWOT analysis on his/her clinical abilities	1	2	3	4	5
6.8 The student does self-reflection on clinical abilities	1	2	3	4	5
6.9 The student writes a report on patient management	1	2	3	4	5
6.10The student keeps a 'clinical journal'	1	2	3	4	5

TEACHING/LEARNING ACTIVITY 6: Specific Clinical Tasks

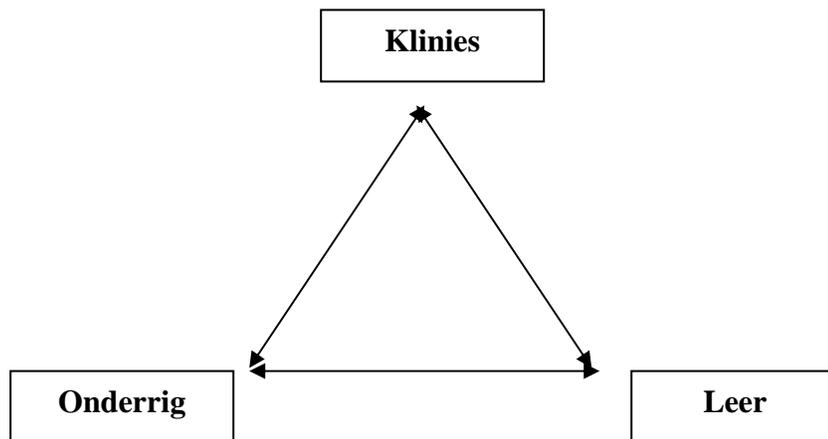
How much do you learn?

7.1 The student makes a poster	1	2	3	4	5
7.2 The student evaluates an outcome measure	1	2	3	4	5
7.3 The student writes a case report on patient management	1	2	3	4	5
7.4 The student participates in a journal club	1	2	3	4	5
7.5 The student writes a report on evidence-based Physiotherapy	1	2	3	4	5
7.6 The student writes a report on the value of patient statistics	1	2	3	4	5
7.7 The student completes a clinical folder for assessment	1	2	3	4	5

THE END

THANK YOU!

APPENDIX B: VRAELYS AAN KLINIESE DOSENTE



KLINIESE ONDERRIG IN FISIOTERAPIE

Titel

Effektiewe Kliniese Onderrig in Fisioterapie: Leerders en Kliniese Dosente aan Stellenbosch Universiteit se mening.

Doel:

Om te bepaal wat leerders en kliniese dosente beskou as effektiewe onderrigstrategieë om leer in die klinies omgewing te bevorder.

Navorsers: Dawn Ernstzen

E-pos: dd2@sun.ac.za

Tel: 084 581 0693 or 021 938 9497

Fax: 021 931 1252



Beskrywing van terme:

Kliniese Dosent: Alle Fisioterapeute betrokke by die kliniese leerondervinding van Fisioterapie studente.

Onderrig/Leer aktiwiteite: Aktiwiteite wat die dosent gebruik, met die doel om leer te bevorder.

Belangrik: Het 'n beduidende effek op die leerproses.

Fasilitasie: Die dosent help die student om deur ontdekking te leer en om eienaarskap van leer te neem.

Kliniese redenering: Die kognitiewe prosesse (denke) wat gebruik word in die evaluering en hantering van 'n pasiënt.

Probleemoplossing: Stappe wat gevolg word om 'n oplossing vir 'n probleem te vind.

Hierdie studie word finansiëel ondersteun deur Die Fonds vir Innovasie en Navorsing in Leer en Onderrig (FINLO), Sentrum vir Onderrig en Leer, Stellenbosch Universiteit.

A. Vir die volgende katagorië, kies asseblief DIE SES (6) WAT U DIE MEESTE VERKIES deur die korresponderende lyn te merk.

1. Kies asseblief SES rolle van die kliniese dosent wat u as mees belangrik beskou:

- (a) Mentor _____
 (b) Vriend _____
 (c) Tegniek demonstreerder _____
 (d) Fasiliteerder van leer _____
 (e) Rol model _____
 (f) Vraer van vrae _____
 (g) Assesseerder/evalueerder _____
 (h) Kennis voorsiener _____
 (i) Reflekteerder _____
 (j) Berader _____
 (k) Ander? *Spesifiseer asseblief*

2. Kies asseblief SES belangrikste eienskappe van die kliniese dosent wat u as noodsaaklik beskou vir optimale leer:

- (a) Respekteer die student _____
 (b) Ondersteun die student _____
 (c) Goeie kommunikeerder _____
 (d) Toeganklikheid _____
 (e) Entoesiasme _____
 (f) Onbevooroordeeld _____
 (g) Georganiseerd _____
 (h) Interpersoonlike vaardighede _____
 (i) Luisteraar _____
 (j) Selfversekerd _____
 (k) Toon besorgdheid vir student _____
 (l) Gee erkenning aan student vermoëns _____
 (m) Ander? *Spesifiseer asseblief*

3. Kies die SES onderrig/leer aktiwiteite waartydens u dink studente die meeste leer tydens klinies:

- (a) Demonstrasies _____
 (b) Terugvoer _____
 (c) Ondervraging _____
 (d) Refleksie _____
 (e) Eweknie evaluering _____
 (f) Fop evaluering _____
 (g) Student word afgerig _____
 (h) Lesing _____
 (i) Groep leer sessies _____
 (j) Een tot een leer sessies _____
 (k) Op eie leer _____
 (l) Wanneer leer gefasiliteer word _____
 (m) Bespreking met mede-studente _____
 (n) Bespreking met die dosent _____
 (o) Kliniese take _____
 (p) Ander? *Spesifiseer asseblief*

4. Kies die SES onderrig/leer strategiëe wat u dink vir die student van meeste waarde is tydens klinies:

'n Goeie kliniese dosent:

- (a) Gee konstruktiewe terugvoer _____
 (b) Verbind teorie met praktyk _____
 (c) Bevorder student deelname _____
 (d) Onderrig gebaseer op student behoeftes _____
 (e) Fasiliteer dokumentasie vaardighede _____
 (f) Laat student inisiatief neem _____
 (g) Fasiliteer pasiënt hantering _____
 (h) Fasiliteer assesserig van prioriteite _____
 (i) Fasiliteer bewysgesteunde praktyk _____
 (j) Fasiliteer probleemoplossing _____
 (k) Maak evalueringsprosedures bekend aan student _____
 (l) Fasiliteer kliniese redenering _____
 (m) Laat student sy/haar eie leer hanteer _____
 (n) Ander? *Spesifiseer asseblief*

5. Wanneer dink u, leer studente meer? (Kies slegs een van die twee gegewe opsies)

(a) Kliniese onderrig op 'n een:een (individuele) basis	
(b) Kliniese onderrig in a groep situasie	

6. Wat, in u opinie, is die ideale aantal groeplede vir 'n groepleersituasie in klinies? *Omsirkel asseblief u keuse.*

1 2 3 4 5 6 7 8 9 10 11 12

7. Motiveer asseblief u antwoord in vraag 6.

8. Hoeveel keer per week sou u ideaal gesproke 'n afspraak met 'n student wou hê? ____ per week.

9. Hoe lank behoort so 'n afspraak met die student te duur? _____

10. Hoe lank, dink u, behoort 'n kliniese blok ideaal gesproke te wees? _____ Weke

11. Sou jy verkies dat studente voldag of halfdag klinies werk? (*onderstreep asseblief*)

12. Is u Manlik of Vroulik? (*onderstreep asseblief*)

13. Wanneer het u gegraduateer? _____

14. Hoe lank is u al 'n kliniese dosent? _____ jare

15. Het u enige opleiding in kliniese onderrig ontvang? Ja Nee (*onderstreep asseblief*)

16. In watter, indien enige van die volgende onderwerpe, sou u meer opleiding wou ontvang?

Merk asseblief die korresponderende lyn.

- (a) Die sielkunde van leer _____
- (b) Onderrig metodes _____
- (c) Beradingstegnieke _____
- (d) Interpersoonlike vaardighede _____
- (e) Wetlike verantwoordelikhede _____
- (f) Organisasie/beplanning van tyd _____
- (g) Leerdoelwitte stel vir studente _____
- (h) Beplanning van leer vir studente _____
- (i) Assessering van studente _____
- (j) Punttoekenning tydens toetse _____
- (k) Kulturele diversiteit _____
- (l) Ander? Spesifiseer asseblief _____

B. Dui asseblief aan hoe effektief u dink die volgende ONDERRIG/LEER AKTIWITEITE is in die fasilitering van leer van kliniese vaardighede.

Omsirkel asseblief u keuse, op 'n skaal van 1 tot 5:

1. Uiters effektief
2. Baie effektief
3. Effektief
4. Minimaal effektief
5. Glad nie effektief nie

ONDERRIG/LEER AKTIWITEIT 1: Pasiënt gesentreerde aktiwiteite

Hoe effektief is die volgende om leer in klinies te fasiliteer?

1.1 Die dosent demonstreer pasiënt evaluering/behandeling	1	2	3	4	5
1.2 Die dosent neem kliniese praktyk van die student waar en gee terugvoer	1	2	3	4	5
1.3 Die student demonstreer pasiënt evaluering/behandeling en die dosent fasiliteer die proses	1	2	3	4	5
1.4 Die student neem die kliniese praktyk van mede-student waar	1	2	3	4	5
1.5 Die dosent fasiliteer refleksie na 'n demonstrasie	1	2	3	4	5
1.6 Die student voltooi 'n pasiënt dokumentasie vorm	1	2	3	4	5
1.7 Die roetine evaluering/behandeling van pasiënte deur die student	1	2	3	4	5

ONDERRIG/LEER AKTIWITEIT 2: Bespreking

Hoe effektief is die volgende om leer in klinies te fasiliteer?

2.1 Die dosent doen 'n een tot een tutorial met die student	1	2	3	4	5
2.2 Die studente doen kleingroep-besprekings oor pasiënt hantering	1	2	3	4	5
2.3 Die student neem deel aan 'n X-Straal bespreking	1	2	3	4	5
2.4 Die student word getutor deur 'n mede-student	1	2	3	4	5
2.5 Die student neem deel aan 'n saalrondte	1	2	3	4	5
2.6 Die student bied 'n gevallestudie aan mede-studente en kollegas	1	2	3	4	5

ONDERRIG/LEER AKTIWITEIT 3: Terugvoer aan die student oor kliniese praktyk Hoe effektief is die volgende om leer in klinies te fasiliteer?

3.1 Die dosent gee verbale terugvoer	1	2	3	4	5
3.2 Die dosent gee geskrewe terugvoer	1	2	3	4	5
3.3 Die dosent gee onmiddelik terugvoer	1	2	3	4	5
3.4 Die dosent gee terugvoer oor wat die student goed gedoen het	1	2	3	4	5
3.5 Die dosent gee terugvoer oor die student se beperkinge	1	2	3	4	5
3.6 Die dosent gee terugvoer oor beide beperkinge en sterk punte van student	1	2	3	4	5
3.7 Die dosent gee terugvoer oor die student se kennis	1	2	3	4	5
3.8 Die dosent gee terugvoer oor die student vaardighede	1	2	3	4	5
3.9 Die dosent gee terugvoer oor die student ingesteldhede	1	2	3	4	5

B. Dui asseblief aan hoe effektief u dink die volgende ONDERRIG/LEER AKTIWITEITE is in die fasilitering van leer van kliniese vaardighede.

Omsirkel asseblief u keuse, op 'n skaal van 1 tot 5:

- | |
|---------------------------|
| 1. Uiters effektief |
| 2. Baie effektief |
| 3. Effektief |
| 4. Minimaal effektief |
| 5. Glad nie effektief nie |

ONDERRIG/LEER AKTIWITEIT 4: Student assessering
Hoe effektief is die volgende om leer in klinies te fasiliteer?

4.1 Die student evalueer hom/haarself oor pasiënt hantering	1	2	3	4	5
4.2 Die student word deur mede studente ge-evalueer oor pasiënt hantering	1	2	3	4	5
4.3 Die student word deur die pasiënt oor pasiënt sorg evalueer	1	2	3	4	5
4.4 Die dosent evalueer die student deur 'n fop ('mock') toets situasie	1	2	3	4	5
4.5 Die dosent evalueer die student deur middel van die bloktoets	1	2	3	4	5
4.6 Die student evalueer sy/haar eie leer	1	2	3	4	5

ONDERRIG/LEER AKTIWITEIT 5: Ander
Hoe effektief is die volgende om leer in klinies te fasiliteer?

5.1 Die dosent en student deel verantwoordelikheid vir leer tydens klinies	1	2	3	4	5
5.2 Die dosent bied 'n lesing aan oor pasiënt hantering	1	2	3	4	5
5.3 Die studente doen rolspel oor kliniese praktyk	1	2	3	4	5
5.4 Die student neem chirurgie waar	1	2	3	4	5
5.5 Die student kyk na 'n video oor pasiënt hantering	1	2	3	4	5
5.6 Die student stel saam met die dosent leer aktiwiteite vir klinies op	1	2	3	4	5
5.7 Die student stel 'n SWOT analise op oor sy/haar kliniese vermoëns	1	2	3	4	5
5.8 Die student doen selfrefleksie oor klinies vermoëns	1	2	3	4	5
5.9 Die student skryf 'n verslag oor pasiënt hantering	1	2	3	4	5
5.10 Die student hou/skryf 'n 'kliniese joernaal'	1	2	3	4	5

C. Dui asseblief aan hoe waardevol u dink die volgende ONDERRIG/LEER AKTIWITEIT is in die fasilitering van leer van kliniese vaardighede.

Omsirkel asseblief u keuse, op 'n skaal van 1 tot 5:

- | |
|---------------------------|
| 1. Uiters waardevol |
| 2. Baie waardevol |
| 3. Waardevol |
| 4. Minimaal waardevol |
| 5. Glad nie waardevol nie |

ONDERRIG/LEER AKTIWITEIT 6: Spesifieke kliniese take
Hoe waardevol is die volgende?

6.1 Die student maak 'n plakaat	1	2	3	4	5
6.2 Die student evalueer 'n uitkomstmeting	1	2	3	4	5
6.3 Die student skryf 'n verslag oor pasiënthantering	1	2	3	4	5
6.4 Die student neem deel aan 'n joernaalklub	1	2	3	4	5
6.5 Die student skryf 'n verslag oor bewysgesteunde Fisioterapie	1	2	3	4	5
6.6 Die student skryf 'n verslag oor de waarde van pasiënt statistiek	1	2	3	4	5
6.7 Die student voltooi 'n kliniese leër vir evaluering	1	2	3	4	5

DIE EINDE

BAIE DANKIE!

APPENDIX C: INTERVIEW SCHEDULE

INTERVIEW QUESTIONS - STUDENTS
Introduction
GENERAL QUESTIONS

1. Describe your best clinical learning/teaching session so far

2. Describe your ideal clinical learning/teaching session

(Why is ideal for you)

What happened that made it ideal

Identify aspects that made it ideal

TEACHING LEARNING ACTIVITIES

3. What methods of teaching are of most value to you in clinical

Prompts (Why is it effective)

In what way you best learn in clinical

The process of learning in clinical

4. Demonstrations

How should a demonstration in clinical be handled (how should it be handled. How does it help you learn? What do you learn from a demonstration?)

5. Feedback

Describe the type of feedback you consider necessary in clinical learning.

What is good feedback? Type, How often? On what should feedback be given?

6. How can Problem solving be facilitated in clinical?

Prompts (Why is it effective)

7. How can clinical reasoning be facilitated in clinical?

Prompts (Why is it effective)

8. Reflection

Is this used? How does it help you to learn?

9. Assessment

What do you think of mock assessments?

What do you think of peer assessment?

What do you think of self assessment?

10. Responsibility

What is the role/responsibility of the student in clinical learning?

11. Motivation

What motivates you in clinical practice?

ATTRIBUTES OF THE CLINICAL TEACHER

11. What do you see as the main roles of the clinical lecturer/clinician

Differentiate between the two?

What kind of **mentorship** do you expect from your clinical teacher?

12. Describe what you see as a GOOD clinical teacher

A poor clinical teacher?

In what ways do you want the clinical teacher to respect you?

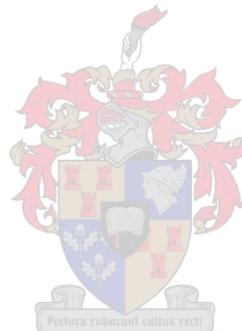
What are the elements of approachability/what makes a clinical teacher approachable?

What do you see as good communication with the clinical teacher?

13. What do you see as good communication from the clinical teacher?

14. Clinical teacher as rolemodel?

Closing



VRAE VIR ONDERHOUD – KLINIESE DOSENT

Inleiding

ALGEMENE VRAE

Blok? Orto/Neuro/Resp

Hoeveel keer per week? Tyd per student bestee?

Hoe verloop 'n kliniese sessie gewoonlik?

LEER EN ONDERRIGAKTIWITEITE

Demonstrasies

Wat dink jy daarvan, wat is die nut daarvan

Hoe behoort 'n demonstrasie in klinies hanteer te word

Wat leer studente uit 'n demonstrasie?

Terugvoer

Wanneer gee jy terugvoer? Oor watter aspekte van klinies gee jy terugvoer?

Hoe ervaar studente terugvoer? Beskryf die tipe terugvoer wat jy dink nodig is in klinies.

Hoe beïnvloed die teenwoordigheid van die pasient 'n kliniese sessie

Besprekings

Wanneer? Watter aspekte?

Hoe hanteer? Wat leer studente?

Refleksie

Word dit gebruik? Hoe help dit leer aan?

Hoe kan **kliniese redenering en probleemoplossing** gefasiliteer/aangespreek word in klinies?

Assessering

Wat dink jy van mock toetse?

Wat dink jy van eweknie evaluering?

Wat dink jy van self evaluering?

Verantwoordelikheid

Wat is die rol/verantwoordelikheid van die student in kliniese leer? Behoort meer inisiatief aan studente gegee word?

Hoe behoort die kliniese leerprogram te verloop en waarom?

EIENSKAPPE VAN 'N KLINIESE DOSENT

Hoe gaan jy te werk om 'n goeie leeratmosfeer in die kliniese omgewing te skep?

Wat sien jy as die hoof rolle van die kliniese dosent vs die hoofrolle van die kliniese dosent?

Mentor – tipe mentorskap gee jy aan studente
Rolmodel-in watter aspekte wil jy vir die student 'n rolmodel wees

Beskryf wat jy sien as 'n goeie kliniese dosent
"n Swak kliniese dosent?

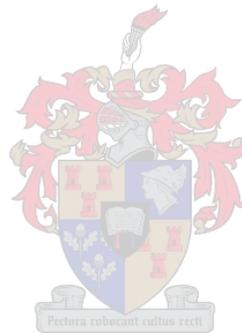
Die rol van motivering.
Wat motiveer studente om te leer?

Watter verwagtinge het jy van die student?

Hoe verseker jy toeganklikheid.
Wat maak 'n kliniese dosent toeganklik.
In watter terme/aspekte behoort 'n kliniese dosent toeganklik te wees?

Wat sien jy as goeie kommunikasie vanaf die kliniese dosent

Afsluiting



APPENDIX D: COVER LETTER

September 2005

Dear student

Participation in research project

I would like to invite you to participate in this research project, by completing the enclosed questionnaire.

The title of the study is:

"Effective Clinical Education in Physiotherapy: Learners' and Clinical Teachers' views at Stellenbosch University".

The study focuses on current Physiotherapy clinical education practices at Stellenbosch University. The aim of the study is to determine what learners and clinical teachers view as effective educational strategies to enhance learning in the clinical environment. This information may provide a baseline to formulate a model of student centred clinical education. As you have experience in the field of clinical education, you are an important contributor to the study.

The questionnaire is anonymous; therefore please feel free to write your honest opinion. This study has been approved by the Committee for Human Research at Stellenbosch University and will be conducted according to ethical guidelines. **The questionnaire will take approximately 10-15 minutes to complete.**

It will be appreciated if you could return the completed questionnaire by handing it to the Physiotherapy Secretary by **7 October 2005**.

Your participation in this study is highly appreciated!

Kind regards

Dawn Ernstzen
(Student: M Phil in Higher Education)

APPENDIX E: INFORMED CONSENT FORM

INFORMED CONSENT FORM

Declaration by participant

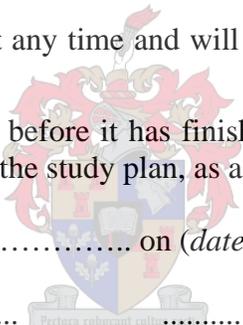
By signing below, I agree to take part in a research study entitled:

”Effective Clinical Education in Physiotherapy: Learners’ and Clinical Teachers’ views at Stellenbosch University”.

I declare that:

- I have read or had read to me this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.
- I may be asked to leave the study before it has finished, if the researcher feels it is in my best interests, or if I do not follow the study plan, as agreed to.

Signed at (*place*) on (*date*) 2005.



.....
Signature of participant

.....
Signature of witness

Declaration by investigator

I (*name*) declare that:

- I explained the information in this document to
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did not use a translator.

Signed at (*place*) on (*date*) 2005.

.....
Signature of investigator

.....
Signature of witness

APPENDIX F: INFORMED CONSENT FORM
--

VORM VIR INGELIGTE TOESTEMMING

Verklaring deur deelnemer

Met die ondertekening van hierdie dokument onderneem ek,, om deel te neem aan 'n onderhoud vir die navorsingsprojek getiteld:

"Effektiewe Kliniese Onderrig in Fisioterapie: Leerders en Kliniese Dosente aan Stellenbosch Universiteit se mening".

Ek verklaar dat:

- Ek geleentheid gehad het om vrae te stel en dat al my vrae bevredigend beantwoord is.
- Ek verstaan dat deelname aan hierdie navorsingsprojek **vrywillig** is en dat daar geen druk op my geplaas is om deel te neem nie.
- Ek te eniger tyd aan die navorsingsprojek mag onttrek en dat ek nie op enige wyse daardeur benadeel sal word nie.
- **Die onderhoud op audioband opgeneem mag word.**

Geteken te (*plek*) op (*datum*) 2005.

.....
Handtekening van deelnemer

.....
Handtekening van getuie



Verklaring deur navorser

Ek (*naam*) verklaar dat:

- Ek die inligting in hierdie dokument verduidelik het aan
- Ek hom/haar aangemoedig het om vrae te vra en voldoende tyd gebruik het om dit te beantwoord.
- Ek tevrede is dat hy/sy al die aspekte van die navorsingsprojek soos hierbo bespreek, voldoende verstaan.
- Ek all inligting as konfidensieel sal hanteer.

Geteken te (*plek*) op (*datum*) 2005.

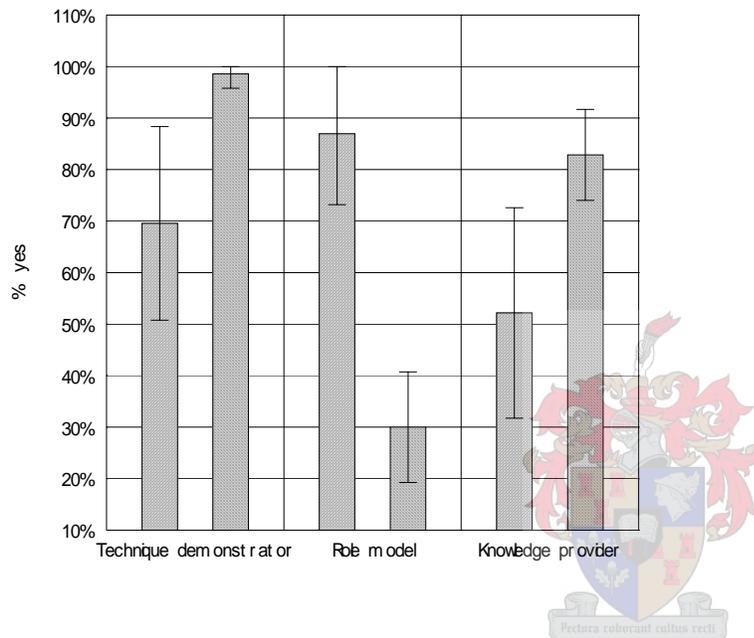
.....
Handtekening van navorser

.....
Handtekening van getuie

APPENDIX G: CONFIDENCE INTERVALS

Confidence interval at 5%.

Because the confidence intervals (compared between students and teachers) do not overlap, there appears to be significant differences in the proportions between students and teachers.



APPENDIX H: EXAMPLE OF INTERVIEW TRANSCRIPT
--

TRANSKRIPSIE**Onderhoud: student IV(e) – 41 minute****Kan jy vir my vertel wat was jou beste leerondervinding in klinies**

Oor die afgelope 4 jaar?

Ja

Wat goed was?

Ja

Leiding van dosente. Nie altyd by almal so baie. Maar daar was van die wat ingesit het en gewys het dat hulle omgee en jou laat voel jy is nie dom nie, dat jy nog kan verbeter. Dit het my baie laat groei deur my kliniese opleiding deur die input van dosente en mede studente.

Wat ook baie help is die blootstelling aan 'n verskeidenheid van patalogiëe. Dit is nie so leersaam as jy net pasiënte met bv rugpyn sien nie. 'n Mens moet blootgestel word aan 'n wye verskeidenheid toestande en probleme wat jy kan teëkom. Dit help met vir die identifisering en hantering daarvan.

Watter metode van kliniese onderrig werk die beste vir jou?

Ek sou sê *definitief* demonstrasies. Demonstrasies waar die dosent 'n pasiënt reel en die dosent gaan *deur alles* soos deur die onderhoud. Of eers saam deur die leër gaan en dan die onderhoud self doen. Maar bespreek dan met die student en vra uit die leer wat dink julle wat moet uit die onderhoud kom. Doen dan die onderhoud self sodat ons kan sien watse spesifieke en die vloei van die onderhoud sodat ons kan sien: sy vra nou dit so dat is die volgende logiese vraag om te vra om by 'n spesifieke probleem uit te kom of om die probleem te identifiseer.

Dan die fisiese ondersoek te doen en deur alles te gaan en dan... spesifieke tegnieke op die pasiënt te demonstreer. Want...om dit (tegnieke) te doen in die klas en dit te doen in prakties is alles goed en wel maar op dit op 'n pasiënt te doen is heeltemal anders. Dis 'n dit is heeltemal 'n different feel wat jy kry as jy dit doen op 'n pasiënt. Daai het my baie gehelp.

Bv Mirda op spinaal koordbeserings – sy het vir ons sulke demonstrasies gegee. By neuro op WCR. Sy het deur alles gegaan, die onderhoud, mediese geskiedenis en alles dit... , potensiële probleme. Sy het elke spesifieke probleem gevat en en dit opgebreek en dit aan ons verduidelik sodat ons kan verstaan en dit kon doen in die kliniese opset. Dit was vir my die beste tipe manier van onderrig.

Wat het jy daaruit geleer?

Um... Hantering van die pasiënt, hoe om die situasie te hanteer En logiese..., daai... Kliniese beredenering sal ek maar sê. Want om te *sien* as iemand dit uitredeneer terwyl die persoon besig is met die pasiënt, jy sien daai logiese denke en daai denkproses en jy begin *ook* so te dink. Waar in die klas leer jy klomp teorie en klomp tegnieke maar om dit bymekaar te bring – *dit is die ding* wat die probleem is dit is hoekom demonstrasies so goed is

In demonstrasies bring jy die teorie en prakties bymekaar in die *kliniese* opset self Dis hoekom ek dink dis goed.

Wat dink jy van demonstrasies deur jouself?

Ook goed. Ek dink dis 'n goeie ding alhoewel ek aan die begin nie so gedink het nie! As ek terugkyk. Dit het definitief vir my gehelp om te groei want dit gee jou selfvertroue.

Dit is 'n stresvolle ding. Om gekritiseer te word is maar vir almal (as ek so kan sê) 'n stresvolle ervaring. Veral as jy in jou 3^{de} jaar is want dit voel vir jou jy weet nie wat jy doen nie.

Maar dis nog steeds 'n goeie ding om dit te begin doen. Al want hoe meer jy dit doen, hoe makliker gaan dit raak. Want as jy in 4^{de} jaar kom en....As jy in die hospitaal kom, met interdisiplinêre goeters, dan moet jy met die dokters kan kommunikeer en jy moet kan na hulle gaan en se OK dit is wat ek dink –Byvoorbeeld sê: 'Ons kan nou die pasient van die ventilator af speen. Ons kan hom maar afhaal' – daarvoor het jy selfvertroue nodig.

Ek dink jy sal nie daai selfvertroue kan ontwikkel as jy nie 'gedwing' word om voor ander, voordragte te gee voor jou dosent en selfs jou mede-studente.

Wat leer jy uit die situasie waar jy self die dem gee?

Um mmmm daai Selfvertroue

Jy sien waar is jou swak punte is as jy kritiek kry definitief

As jy 'n dem doen voor jou dosent , en dit is ook een ding wat ek wil hê, *die dosent nie moet nie inpitch* en sê 'doen dit nou sus en so nie'. Los my eers dat ek dit klaar doen,

Agterna kan jy vir my sê: 'dit het jy gedoen, dit kon jy beter gedoen dit het jy uitgelaat'. Dit help my om my swak punte raak te sien maar dan moet dit ook my goeie punte vir my uitwys sodat jy kan goed voel jousef en so jou selfvertroue bietjie verbeter, as jy daai het kan jy vir jousef sê: 'ek is goed in hierdie, maar wat kan ek aan daardie doen om myself te verbeter'. Dan sal ek dit waardeer...

In put van die dosent itv terugvoer of info wat jy nog kan kry of inligtingstukke gee. Miskien is jou kennis nie goed genoeg nie, dan kan daai inligtingstukke wat sy vir jou gee help om jou kennis te verbreed en so jou kliniese vermoë te verbeter.

Jy het genoem dat jy nie wil hê die dosent moet inpitch nie, Hoekom?

Want dan... dit..ek het al agtergekom baie as ek besig is met 'n bloктоets.... (????)

Behalwe as ek nou rerig rerig sukkel, en die dosent sien ek weet nie wat ek doen nie dan sal ek dit waardeer as dosent inkom en se OK, maar nou dis 'n.... um... Of *vra* my dan, wat wil jy nou eintlik doen. Op so 'n manier, half lei, nie net inkom en kom oorvat nie. Lei my dan eerder in die regte rigting, moenie vir my kom se: 'staan eenkant toe, kom ek doen dit nie'. Dis wat ek bedoel....

Wat dink jy van demonstrasies gegee deur ander studente?

Mmm, Ook goed, ek het ook al agtergekom, maar dis seker die geval met almal, ek sien altyd ander goed baie gemaklik die goed raak as jy iemand moet merk of dophou wat 'n dem het . Want as jy self in daai situasie is, mis jy net soveel goed. Ek weet nie hoekom nie.

Dit is ook 'n goeie ding want nou sien jy dit raak en jy sou dit nooit raakgesien het as ek self in daai situasie gewees nie en dan miskien is dit iets wat ek na moet kyk of verbeter om myself as terapeut te verbeter.

As ek nou kan opsom wat jy gese het: jy verkies die situasie waar die dosent die demonstrasie gee terwyl sy deur die proses met jou praat en tweedens die opsie waar jy self die dem gee en....

Ja ek dink dit beter so omdat, daai volgorde , in plaas van..

Want dis die groot probleem wat ek het met die met 3^{de} jaar klinies het. Jy word ingestuur die eerste dag van klinies, jy moet voorberei, maar het nog nooit met pasiente gewerk nie.

Jy kry nie by alle plekke inleiding/induction nie. Sommige blokke kom jy net en jy moet pasiënte sien. Jy is so verbouereed want wat gaan ek nou met die pasiënt doen jy het soveel dinge geleer teorie en

prakties, maar geen mensekennis nie. Ek het geen kennis oor hoe gaan ek nou aan die pasiënt vat of hoe gaan ek die pasient benader

As ek vooraf 'n demonstrasie gehad het waar die dosent. Waar die dosent die die pasient behandel en met die pasient gepraat en so aan het dan kan ek gesien het hoe ek dit moet approach. Dan kan ek sien waar ek moet begin en hoe ek dit moet approach Ek sou sien waar ek moet begin en waarna moet ek beweeg. As jy net ingegooi word in die diep kant waar begin jy? Jy begin in die middel en dan besef jy teen die einde jy is nou weer by die begin en dan moet jy weer oor beging. Ek voel nie dis 'n goeie leerervaring nie ...

Hoe sou jy voorstel moet jou kliniese program te verloop?

Ek sou se miskien die eerste 2 dae demonstrasies gee, miskien nie dosent nie, miskien die opgeleide op die blok. Dat hulle nie daai dag pasiënte boek vir hulself nie of hulle met jou pasiënte met jou sien of 2 studente met die opgeleide. Die dosent kan dan leiding neem. Die kliniese dosent moet dan stap vir stap deurgaen: OK ons kyk na die leër wat wil ons uit die leër hê en hoekom is dit NB, begin met die onderhoud, so benader jy die pasiënt, establish a rapport met die pasiënt. Dis nogal belangrik vir my.

Want dan sal die pasiënt meer vry voel om met jou te gesels oor sy probleme, jou te vertel van ding wat 'n invloed het op sy toestand, sêkondere dinge bv sosiale aspekte. Ons word gehamer op die biosigosiale model maar ons word nooit gewys hoe om dit toe te pas nie. Met 'n dem sien ons die psigososiale model waarvan almal praat....Want op my eerste dag het ek sommer net die pasiënt gevra wat fout is met sy nek en nie eers 'n rapport met die pasiënt geskep nie.

Dan kan ons nou aangaan want ons weet mos nou waar om te begin en hoe...

Ons gaan obviously nog steeds sukkel, maar dan moet die opgeleide/dosent toeganklik wees vir die student. Sodat as jy vrae het, moet jy nie huiwer om te vra nie. Hulle moet vir jou sê: 'enigiets wat julle nodig het ons is daar om vir jou te help'. Sommige tye voel mens nie so nie, jy voel nie dat jy met die mense kan gesels nie.

Dan by week 2-3?

Dan sou ek sê...Miskien dan 'n nuwe ding wat ek nou agtergekom het: Pasiënt besprekings. Want dis 'n baie goeie ding...

Op 'n Vrydag/of spesifieke dag kies en dan bespreek julle probleempasiënte. Jy kies 2-3 pasiënte wat vir jou 'n probleem is. En julle, jy en die dosent of die opgeleide en bespreek dit. Studente bring hulle evalueringsforms en bespreek dit dan en jy sê wat jy gedoen het, jy sê wat jy dink, en vra vir input op dit wat jy dink.

Daai besprekings help jou defnitief om jou kliniese beredenering verbeter. Die vrae wat daar uitkom soos hoekom doen jy dit/hoekom doen jy dat/hoekom dink jy so. Dit laat jou dink want ons dink nie altyd wat ons gedoen het of neerskryf. Jy moet in 3^{de} jaar dit al begin doen, jy moet pasiënte discuss en bespreek wat jy doen. sodat jy die wiel aan die rol kan sit, sodat jy kan begin *dink aan wat jy doen* en nie net doen nie...dis die ding...

Dit moet eintlik alreeds vroeg begin. Ek voel ek het eers aan die einde van my 3^{de} jaar/begin 4^{de} jaar het ek eers begin kliniese redenering doen, ek kon uitredeneer wat is wat en hoekom doen ek wat.

Wie moet betrokke wees by die bespreking?

Die 4 studente op die blok en die dosent of opgeleide. Dit is nie so 'n threatening situasie soos as dit bv in klasverband gedoen word. As 'n dosent in die klas sê: 'kom ons bespreek 'n pasiënt, wie wil hulle evalueringsvorm bespreek'. Niemand sal dit wil doen nie want scrutiny is nie altyd lekker in so 'n groot groep nie. In 'n kleiner groepsituasie is dit makliker om jouself uit te druk en dit help jou ook om kritiek beter te vat, sal ek maar sê...

En ander bespreking?

Ja, bespreking na demonstrasie. Enige bespreking van 'n kliniese ding wat uitgevoer is definitief goed. Ek het altyd gedink (gmf) o refleksie wat is dit dit is so stupid, maardis 'n goeie dink as jy dink oor wat jy gedoen het... Refleksie... *praat* oor wat jy gedoen het,

Terugvoer gee,

Die dosent moet nie net daar staan en sê: 'nee maar dis goed' nie. Dit is nie vir my goeie terugvoer nie. Moenie net sê dit was goed nie. Sê vir my spesifiek. Sê vir my 'jou AP was goed of sleg of jy het dit reg geïnterpreteer'. Moenie net se jy is orait nie, dit laat my nie gemaklik voel nie. Sê vir my spesifiek...

Spesifieke terugvoer oor wat jy gedoen het, maar nie afbrekend nie, opbouende kritiek, op 'n opbouende manier dit oordra. En natuurlik ook hoe jy dit doen, want studente is baie *'fragile'* sal ek maar sê...

Fisioterapie is so 'n groot deel van 'n fisioterapie student se lewe, *defnitief*, ek dink nie die ander mediese studente is so involved in hul beroepe soos fisioterapie nie. Want ons...Dit verg baie emosioneel en fisies van jou as 'n persoon self ook. Dis omdat jy so baie insit. Dis die rede hoekom ek dink baie mense so geknak word deur fisio. Veral as hulle kritiek kry oor sulke goed. Dis hoekom baie mense na blokke toetse of praktiese huil, hulle *huil* want hulle voel hulle het so baie ingesit van hulleself en hulle voel hulle kry nie baie terug nie daaruit. So definitief, gee kritiek, maar gee dit op 'n opbouende manier.

Watter tipe terugvoer verkies jy?

Positief en negatief

Wat dink jy van mock toetse?

Ek dink.... dis nie eintlik so leersaam nie.

Ja, maar, ek dink dit gaan om die feit dat jy weet dit is 'n mock toets, so jy berei nie eintlik so goed daarvoor voor soos vir 'n rêrige toets nie. En agterna voel jy ag dit tel nie vir punte nie, so ek worry nie nou so baie daaroor nie. Maar aan dit ander kant help dit jou...

Dit help ietwat want dit help jou om goed te bespreek wat jy nie verstaan het nie. Dit is 'n leer ervaring maar omdat jy dit sien as net 'n mock, nie vir punte nie. Ek hoef nie so goed voor te berei daarvoor nie. Jy worry nie eintlik oor die voorbereiding, jy doen nie eintlik so goed as wat jy sou kon nie...Aan die ander kant leer jy ook daaruit want jy sien dan nou jou swak en sterk punte ook raak.

En wat dink jy van makkerevaluering/peer assesement?

Ek hou nie daarvan nie, ek weet nie hoekom nie, maar ek hou nie daarvan nie. Om deur 'n student gemerk te word, ek weet nie, ek kan dit nie beskryf nie. Ek voel eintlik meer op my senuwees wanneer 'n student my merk as wanneer 'n dosent my merk. Dis omdat ons op dieselfde vlak is, as daai student nou goed sien by jou wat jy nie kon gedoen het nie, dan voel jy maar hoekom weet hy dit en jy weet dit nie jy voel hoekom. Miskien is dit die rede hoekom dit meer stresvol of ongemaklik is.

En as jy die merker is?

Nee dis 'n ander saak! Nee, dan voel ek nou nie so erg nie

As dit net julle 2 is wat dit doen en die student is nie by en julle hoef nie punte te vergelyk nie en die dosent is nie by nie..... na die tyd moet julle bymekaarkom en besluit/bespreek watter punt moet ons nou gee.

As dit net jy en die student is dan is dit 'n ander saak, umm...ek sou meer vrymoedigheid wees as dit net ek en die student gewees het om te vra: 'wat doen jy nou? hoekom doen jy dit? of verduidelik gou

dit?. Maar as die dosent daar was sou ek nou nie so ver gegaan het nie, maar gewag het tot die dosent gevra het en dan sou jy nou ook maar by skryf.

Wat behoort die student se verantwoordelikheid in klinies te wees?

Wat dit behoort te wees is dat jy moet jou werk leer en jy moet oplees oor jou pasiënte en deur jou pasiënte gaan en gaan oplees oor die patologiee

Maar dis 'n bietjie onrealisties. 'n Student gaan nie elke dag gaan oplees oor sy pasiënte nie. Hy gaan nie elke dag GERGA toe gaan en gaan oplees nie. Lees dit op/swot dit op, jy sal dit nie elke dag doen nie, net so nou en dan. Miskien is dit hoe dit *moet* wees, maar dis nie realisties nie... so anyhow...

Miskien sou ek dan sê dat elke week is die verantwoordelikheid by jou om te weet as jy ingaan in klinies, jy gaan met mense werk jy werk met ...

Sommige keer het jy 'n groot invloed op daai persoon se lewe, verstaan en wat die uitkoms vir daai persoon gaan wees. As jy nie jou werk reg doen nie, en volledig doen nie dan kan jy kan die persoon terughou/impede/agterhou, as gevolg van jou. Waar daai pasiënte op 'n hoër funksionele vlak kan wees, maar jy hou hom terug agv jou onverantwoordelikheid die feit dat jy nie goed weet nie, omdat jy nie genoeg voorberei het of of opgelees het of genoeg inligting oor die toestand gehad het goed geoefen het jou tegnieke nie.

Dit die ander ding wat ek wou oor gepraat het!

Ons oefen nie ons tegnieke nie, dis die ander groot ding van studente, ons oefen nie ons tegnieke nie. Net voor die prakties doen... Ons skryf nie almal neer in die klas as die dem gegee word nie. Wanneer die toets kom, hardloop jy rond vir notas, jy moet nou vinnig gou oefen want maandag is daar prakties. Maar na die prakties oefen ons dit nie weer nie, totdat ons nou weer 'n prakties daarvoor gaan hê nie. Wanneer jy op klinies kom kan jy dit nie doen nie, nou is jy te bang om te sê ek kan nie daai tegniek doen nie.

Die eintlike verantwoordelikheid lê by die student om vir jou vriende te sê, ok kan jy daai tegniek doen kom ons oefen ons tegnieke. Bv as ons saam op ORTO is, kan ons elke week 'n ander area se tegnieke doen. En kyk met watter tegnieke sukkel ons, ons oefen dit... Dit dink ek behoort die student se verantwoordelikheid om jou tegnieke te ken, want die dosent kan nie agter jou aanhardloop en sê: 'ken jy jou tegnieke?'

Hoe dink jy hoe kan dosente hiermee help?

Ek dink die oefensessies is baie goed, want jy weet nie of jy getrek gaan wou om die tegniek te doen nie. en ook ...

Ons weet nie altyd hoe die tegnieke op pasiënte voel nie. Toe ons geleer het van eindgevoelens, ek weet dit moet voel soos 'n taai leerband, maar ek het nie gevoel wat is 'n taai leerband gevoel nie.

Die oefensessies help baie, maar dit is die student se verantwoordelik om tegnieke te oefen. Die dosente kan nie nog meer sessies gee nie, die studente sou in elk geval gekla het, want dit sou te veel wees..

Die dosent moet tyd gee in die klas om die tegnieke te oefen, deurgaans en kyk of ons dit kan dit. Sommige dosente doen dit, maar soms is daar nie tyd nie, wanneer daar so baie goed wat in 'n sessie gedruk moet word, daar is nie tyd om alles te oefen nie. Dan word dit verwag van die student om dit te gaan oefen by die huis, maar ons *doen* dit nie. En dis die probleem...

Ons gaan nou aan na 'n ander onderwerp: Wat sien jy as 'n goeie kliniese dosent?

Iemand wat goed kan luister na jou probleme en nie net bla bla bla.... En vir jou sê, 'dit en dit' en nie na jou luister nie. Ek het ook vrae, maar jy gee vir my klomp inligting wat ek alreeds weet maar jy gee nie vir my geleentheid om vir jou te vra nie dit wat ek nie weet nie. Jy laat voel my nie vrymoedig om na jou toe te kom want jy lyk altyd so nors. Jy is so kortaf met my...

Die persoon moet baie tegemoetkomend wees en kan luister na jou en wat jy sê. En dan toepaslik vir jou kan help met wat jy ookal nodig het.

Um Die kliniese dosent moet goeie kennis het op die gebied, *defnitief*. Daar is een persoon wat kliniese toesighouer is wat ek weet wat nie goeie kennis het nie, jy vra haar iets dan weet sy nie. Ek voel nie daai persoon ...die kennis van daai persoon is baie los en vas, weet nie eintlik hê om dit bymekaar te bring nie. My kennis is nie baie goed nie so wat gaan ek *by jou leer* wat net soveel soos ek weet. Jou kennis moet meer wees as myne sodat jy my kennis kan verbreed.

Jy moet 'n kan....'n mense-persoon wees, peoples person. Jy kan nie skugter wees vir my nie. Jy moet leiding kan vat en se: 'dis hoe dit gedoen moet word: so en so. Want ek weet waarvan ek praat'. Of as jy gaan oplees: 'kom ek help jou hiermee'.

Nie net kom staan en sê: 'nee, nee, nee, dis oraait gaan maar so aan'.

Soms is dit nodig om vasgevat te word as 'n student en gesê word, 'nee nou is jy verkeerd jy moet dit só doen'.

Die ander groot ding is goeie kommunikasie tussen die student en die dosent. As dit goed is, is die res van die goed maar bykomelinge, sou ek sê.

Hoe verskil die rol van die opgeleide en die toesighouer?

Die opgeleides het hulle eie werk, hulle kan nie altyd by jou kom insit nie, behalwe by die opleidingshospitale en iniversiteitsinstansies, die opgeleides hier moet meer leiding gee.

Maar hul rol is meer sou ek sê: 'ek is hierso, kom vra my as jy iets nodig het, ek kan jou help'. Dat jy daai gevoel het, as ek sukkel met iets, hier is iemand wat ek kan vra wat my kan help. En ek het die vrymoedigheid om te vra, ek hoef nie skaam of bang te wees nie. Want daai persoon gaan my help.

Die toesighouer, kom in, reël 'n pasiënt en sy gee 'n dem of ek gee 'n dem terwyl die dosent vir my kyk en met toepaslike leiding en gee vir my terugvoer oor dit was goed of sleg.

Wat van die dosent as 'n rolmodel?

Hulle moet vir jou 'n rolmodel wees van professionele gedrag, hoe jy moet optree as 'n opgeleide in die kliniese opset, jou gedrag as professionele persoon, as fisioterapeut teenoor jou pasiënte, jou kollegas, die mense in jou omgewing.

Ook in terme van jou hantering van jou pasiënte, soos die een fisio wat onbekwaam is en net vir al die pasiente infrarooi gee en sy gee niks behandeling aan die pasient. Hoe laat dit nou vir jou voel, watse voorbeeld is dit nou vir jou as student, dit laat jou twyfel aan jou beroep. Jy dink as ek klaar is hoef nie al die tegnieke te doen nie, ek kan ook net infrarooi opsit.

Die toesighouer op die selfde manier, maar meer die rol van 'n fasiliteerder. Want die toesighouer is mos nie elke dag saam met jou nie. Die clinician is mos nou elke dag saam met jou. Dis die indruk wat jy kry van hoe ek moet optree, hoe ek my pasiënte moet behandel.

Wat motiveer jou in klinies?

My pasiënte sou ek sê, veral as jy sien daar is 'n verbetering in jou pte en as jy sien dit wat jy doen help baie. Dan.. dit motiveer jou om aan te gaan...

Soos noudiedag het ek 'n pasiënt gesien wat nie haar broek kom optrek nie, sy kon nie bykom nie en na die behandeling toe sy haar broek kon optrek, sy was so bly, sy het gehuil van blydschap. Dit is vir my die motivering om vir my te sê dit is die moeite werd om aan te gaan en om fisioterapie te swot en om in die beroep te wees

Ook wat my motiveer, is wanner die dosent vir sê 'goed, sê knap gedaan' of vir my *POSITIEWE* kritiek gee maar ook negatiewe kritiek. Se: 'Dit is OK, maar jy kan nog beter doen' dan weet ek darem ek is nie 'n lost case nie. Ek is op die regte pad maar daar is nog room for improvement.

Encouragement van jou medestudente, jou opgeleide en die dosent en clinician. Dis als goed wat 'n rol speel wat jou motiveer om beter te doen.

Wat sou jou laaste boodskap aan kliniese dosente: opgeleides en toesighouers wees?

Van????

'n Student se perspektief

Moenie net altyd wil inspring en oorvat nie, veral nie in prakties of 'n demonstrasie of eksamen situasie nie. Lei my eerder as wat as wat jy my wegstoot en sê: 'kom ek doen dit'. Vra my leidende vrae lei my sodat *ek self* kan begin dink en myself kan lei tot by die punt waar ek kan sien hier het ek verkeerd gedoen en dis hoe ek dit moet regmaak. Moenie by my kom oorvat en sê: 'staan eenkant toe, kom ek doen dit en wys dit nie'. Lei my eerder - meer van 'n fasiliteerder as demonstreerder...want ek leer meer...

En as julle kritiek gee, dink mooi oor wat julle sê. Moenie net sê nie, want 'n mens kan maklik iets se voor jy gedink het en dit kan dalk op die verkeerde indruk,...manier uitkom en verkeerd geïnterpreteer word. Die studente is baie fyngvoelig, hulle vat alles baie letterlik op *GLO MY*. Studente vat *alles* letterlik op wat die dosente vir hulle sê.

Hulle moet mooi dink wat hulle vir die studente sê en hoe hulle dit sê. Dit het defnitief 'n invloed. Ons sit so baie in fisio in emosioneel en fisies. Dit put ons *SO* uit Dit is emosioneel dreinerend. Dit voel dit is soos deel van jou persoon. Fisio is so deel van jou lewe dis so 'n integrale deel van jou lewe, dit vat soo 'n groot deel van jou lewe. Veral as jy 'n student is. Input wat kry terug daarvan af kry vat jy letterlik op want dit is so 'n groot deel van jou.



APPENDIX I: SUGGESTED CLINICAL PLACEMENT PROGRAM

Example only: for students at one clinical placement e.g. Delft community clinic.

Week 1

Monday: Orientation to the clinical area

Orientation to the expectations in the clinical rotation:

- learning expectations as well
- expectations regarding duties

Tuesday: Routine patient assessment, management, documentation

Wednesday:

Demonstrations by the clinical teacher

- 8h00–9h00 Demonstration of patient A: assessment (Group session)
9h00 – 9h30 Reflection/Feedback/Discussion
- 10h30–11h00 Demonstration of patient B: management (Group session)
11h00–11h30 Reflection/Feedback/Discussion

Thursday: Routine patient assessment, management, documentation

Friday: Weekly group discussion on general patient care for one hour
Routine patient assessment, management, documentation

Week 2

Monday: Discuss SWOT analysis with student

Aim to set up a personalized learning contract with a plan of action
(1hour per student)

Routine patient assessment, management, documentation

Tuesday: Routine patient assessment, management, documentation

Wednesday:

Facilitated demonstrations by the students

- 8h00–9h00 Individual demonstration of patient A with student 1
- 9h00-10h00 Individual demonstration of patient B: with student 2
Allocate 15 minutes within session for Reflection/Feedback/Discussion

Thursday: Routine patient assessment, management, documentation

Friday: Weekly group discussion on general patient care for one hour
Routine patient assessment, management, documentation
Could include some patient specific task to enhance clinical reasoning

Week 3

Monday: Revise personalized learning contract with a plan of action
General feedback

Tuesday: Routine patient assessment, management, documentation

Wednesday:

Demonstration by the student in a group and/or individual situation

Teacher facilitates the demonstration according to learner preference

- 8h00–9h00 Demonstration 1
- 9h00-10h00 Demonstration 2
- 10h00 – 11h00 X-ray discussion
Allocate 15-30 minutes within session for Reflection/Feedback/Discussion

Thursday: Routine patient assessment, management, documentation

Friday: Weekly group discussion on general patient care for one hour
And/or X ray discussion
Routine patient assessment, management, documentation
Could include some patient specific task to enhance clinical reasoning

Week 4

Monday: Discuss mid block SWOT analysis with learner
 Feedback
 Adapt personal learning outcomes and learning action plan
 Allow 1 hour per student
 Routine patient assessment

Tuesday: Routine patient assessment, management, documentation

Wednesday:

Mock test

- Teacher as assessor
- Peer assessment

Followed by discussion with Feedback, Self reflection

Plan remedial action if necessary

Thursday: Routine patient assessment, management, documentation

Friday: Weekly group discussion on general patient care
 Could include case presentations

Week 5

Monday: Revisit personal learning outcomes and learning action plan

Tuesday: Routine patient assessment, management, documentation

Wednesday:

Demonstration by the student in a group and/or individual situation

Teacher facilitates the demonstration according to learner preference

Gives special attention to remedial action

- 8h00–9h00 Demonstration 1
- 9h00-10h00 Demonstration 2

Allocate 15-30 minutes within session for Reflection/Feedback/Discussion

Thursday: Routine patient assessment, management, documentation

Friday: Weekly group discussion on general patient care
 Could include some patient specific task to enhance clinical reasoning

Week 6

Monday: Revisit personal learning outcomes – which have not been achieved? Action?

Tuesday: Routine patient assessment, management, documentation

Wednesday:

Clinical competency tests

Thursday: Routine patient assessment, management, documentation

Friday: Weekly group discussion on general patient care

Clinical placement reflection

Revisit outcomes of clinical session. Achieved?