

CHINESE CHARACTER CHALLENGER

汉字挑战者

Supplementary courseware for assisting students learning
Chinese characters

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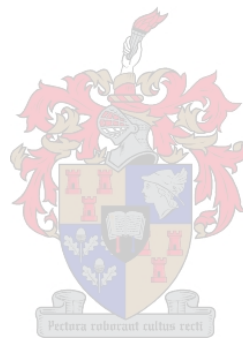


DECLARATION

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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ABSTRACT

In this thesis, I pinpoint the challenge of character learning as my research problem, which is the subsequent motivation to explain the background and rationale of my research. I also discuss the theoretical concepts of Computer Assisted Language Learning (CALL) in relation to cognitive psychology, the constructivist learning theory and Second Language Acquisition theories. This leads to the presentation of my considerations regarding design principles, strategic approach and other relevant decisions.

The multimedia project I designed, named the “Chinese Character Challenger”, a “supplementary courseware for assisting students learning characters”, is an informational and educational-oriented website. It provides learners with the necessary knowledge, hints, tips and sources to cope with their specific learning problems and to achieve their learning potential. It also introduces external resources of learning if learners need further research. The purpose of the website is to assist, to motivate and to further guide students’ learning. To conclude, I have discussed some open issues with regards to adding value in the learning environment.



Key Words

characters, Chinese, error, flash cards, language, learning, motivation, process, research, vocabulary

OPSOMMING

In dié tesis fokus ek my navorsingsprobleem op die uitdaging om Chinese geskrewe karakters aan te leer. Die daaropvolgende motivering is om die agtergrond en redenasie van my navorsing te verduidelik. Ek bespreek ook die teoretiese konsepte van CALL (Computer Assisted Language Learning – Rekenaar Gesteunde Taalonderrig) met verwysing tot kognitiewe sielkunde, die konstruktiewe leerteorie en die aanleerproses van tweede taal teorieë. Dit lei tot die voorlegging van my oorewegings ten opsigte van ontwerpbeginsels, die strategiese uitgangspunt en ander toepaslike besluite.

Die multi-media projek wat ek ontwerp het, genaamd 'Chinese Character Challenger – a supplementary courseware for assisting students learning characters' / 'Chinese Karakteruitdager – aanvullende kursusmateriaal om studente wat karakters leer, by te staan', is 'n inligting en opvoedkundig georiënteerde webwerf. Dit voorsien leerders van die nodige kennis, wenke, en bronne om spesifieke leerprobleme baas te raak en hulle leerpotensiaal te bereik. Dit stel ook eksterne hulpbronne vir verdere navorsing voor. Die doel van die webwerf is om by te staan, te motiveer en leiding te gee aan studente wat verdere leerwerk wil doen. Om af te sluit het ek 'n paar oop vrae uitstaande kussies sake bespreek om waarde tot die leeromgewing toe te voeg.

Sleutelwoorde

karakters, Chinees, fout, flitskaart, taal, leer, motivering, proses, navorsing, woordeskat

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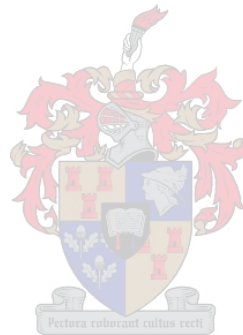


TABLE OF CONTENTS

Declaration	ii
Abstract	iii
Opsomming	iv
Acknowledgements.....	v
Chapter 1 Research Problem and Rationale	1
1.1 Introduction	1
1.2 Research focus	2
1.3 Research application.....	4
1.4 Conclusion	5
Chapter 2 Literature Review	6
2.1 Second Language Acquisition theories	6
2.1.1 Language transfer	6
2.1.2 Contrastive analysis	8
2.1.3 Errors and error analysis	8
2.1.4 Modern UG-based theories	10
2.1.5 Motivation in SLA	11
2.2 Cognitive learning psychology and the constructivist theory: the key elements of learning	13
2.2.1 The learning process	13
2.2.2 Learning by association	14
2.2.3 Learning autonomously	15
2.2.4 Learning strategies	16
2.3 From Computer Assisted Language Learning (CALL) to Value Added Language Learning (VALL)	18
2.3.1 CALL and the information revolution	18
2.3.2 The value of CALL in learning the Chinese language	19
2.3.3 The definition and the nature of VALL	20

2.3.4 The relationship between CALL and VALL	21
2.4 Conclusion	22
Chapter 3 Research Design and Methodology	23
3.1 Research methodology	23
3.2 Project design	24
3.2.1 Conceptual design: framework, principles and consideration	25
3.2.1.1 Content of learning	26
3.2.1.2 Context of learning	27
3.2.1.3 Conditions of learning	28
3.2.1.4 Effects of learning	29
3.2.2 Presentation design: design decisions	30
3.2.2.1 The basic elements: text, graphics and colour	30
3.2.2.2 Dynamic and integrated multimedia: animation, sound and video	31
3.2.2.3 Other elements of effect	32
3.2.2.4 Overall presentation	34
3.3 Conclusion	35
Chapter 4 Discussion and Conclusion	36
4.1 Discussion	36
4.2 Conclusion	37
References	39
Appendices	41



Chapter 1 Research Problem and Rationale

1.1 Introduction

The Chinese language (Mandarin) is a symbolic language which differs from any other European language based on the Roman / Greek alphabet. When learning the Chinese language, it is necessary to employ a paradigm or mind-shift. When teaching the Chinese language, teaching characters is a major concern.

The Chinese language, as well as the teaching of Chinese characters, has a long history. “In more than 3,000 years, from the time of the oracle bone inscription to the present, the total number of characters in existence has reached about 60,000” (Yin & Rohsenow, 1994: i). Each character represents a concept and has its own distinct shape, pronunciation, tone, meaning and function, which can be used in different constructions and could result in slight differences and nuances. “Characters are large in quantity, complex in structure, difficult in pronunciation and meaning, and difficult to learn, especially for beginners” (Li, 1993: 312). As they are ideographic in nature and are composed of various strokes, characters may seem difficult to recognise, to differentiate and to memorise for millions of Mandarin learners.

Learning Chinese characters is vital in learning the Chinese language. The teaching of the Chinese language requires that Chinese characters be taught properly. My own experience has shown itself to be a valuable source of information: after years of teaching the Chinese language, observing learners' class performance, correcting their assignments and evaluating their test papers, I have come to realise that learning characters is the key element and simultaneously the vital problem for second language (L2) learners. Li (1993: 312) states that since the Qin dynasty (221-206BC) to the present, the teaching of characters has been the main element of importance and difficulty in Chinese language teaching. This has led to a great deal of research on the teaching of characters, especially by Chinese language scholars.

This problematic area has also become the point of departure for my own research work and the focus of my teaching. My wish is to assist learners in the most efficient and effective way to master this crucial area of the Chinese language.

The section below, describing my research focus and application, firstly provides more detail regarding the purpose and objectives of my multimedia project, the “Chinese Character Challenger”. In the second chapter, I have conducted a literature review in order to provide a theoretical base for this project. The literature survey assesses the need for Computer Assisted Language Learning (CALL) and whether it can truly add value to the L2 learning experience. The relevance of Second Language Acquisition (SLA) linguistic theories is also discussed and recent learning theories stemming from a psychological background are evaluated. It should be noted the terms “learning” and “acquisition” will be employed interchangeably, without any connotations to Krashen’s Input Hypothesis.¹ The third chapter deals with more specific aspects of the research methodology employed for the project and describes its design. Chapter four presents a discussion and evaluation of the project, leading to a conclusion and recommendations in chapter five.



1.2 Research focus

It has been observed that the more characters L2 learners of Chinese learn, the more easily they seem to confuse them. Learners more frequently confuse new characters with the ones they have already learnt. This can be explained by the fact that many of the characters are identical in shape (visual appearance), sound (pronunciation) and meaning (semantics). Dai (1999:42) confirms that the process of recognising characters requires three basic abilities: a phonological process, an orthographic process and a semantic process.

¹ Krashen distinguishes knowledge that is acquired from knowledge that is learnt. The process of L2 ‘Acquisition’ uses the language faculty in essentially the same unconscious way as first language acquisition; it leads to the ability to actually use the L2. In the process of language ‘Learning’, however, knowledge is gained through conscious understanding of the rules of language. Learning therefore occurs in the L2, but it is extremely rare in the L1. It is furthermore only available to L2 learners who are capable of understanding rules, for instance those above a certain age (Cook 1993:52).

The above hypothesis was incorporated into the planning of my multimedia research project in order to assist learners in their acquisition of Chinese. By presenting an overview of the characters, clearly pointing out the differences between them and by applying the characters correctly to the context, learners are able to practise their character recognition and reading skills and enlarge the extent of their vocabulary so as to learn the characters more efficiently. In selecting the materials and providing learners with examples of differences, I aim to orientate and motivate learners to learn characters.

On the basis of my own observations and discovery during the teaching process, I have accumulated, analysed, categorised and summarised the data and kept records. Whilst working on the multimedia project, I carefully selected characters and prepared them to be shown to learners in order to assist their learning. Eventual trouble-shooting was also taken into account and provided for. In order to ensure that all learner needs are identified and that the objectives of the project are achieved, I designed a questionnaire² which was completed by a number of learners. The questionnaire was indicative of the need, the feasibility and the importance of the project.

The questionnaire completed by the L2 learners of Chinese reflected that the majority consider the learning of Chinese characters to be very difficult, especially due to the fact that there is nothing in the nature of the characters that they can associate with other languages known to them. A widely used strategy to learn characters is to make use of flash cards with Chinese characters on, learners do not always have the time to make their own flash cards. It is also fairly difficult for them to categorise the characters themselves, due to the complicated structure and composition of the characters.

Learners have expressed different opinions regarding what they would consider as optimal teaching materials and multimedia options that would facilitate their learning process. However, many confirmed that it would be very practical and useful if they could have some form of learning materials

² Refer to Appendix 2.

from which they could work on their own for repeated practice after class time. A Computer Assisted Language Learning (CALL) application could be an interesting option to be introduced as a different way of learning, as this generation of learners would consider a computer to be a necessary facility to assist learning, because of its advantage for information access and multimedia effects. A minority of learners however, stated in the questionnaire that they generally prefer working on paper.

1.3 Research application

My project, the “Chinese Character Challenger”, has been designed to function as supplementary courseware assisting students learning Chinese characters.³ The application provides a review of basic knowledge on Chinese characters and, furthermore, presents supplementary courseware for learners’ self-study purposes. The project could be useful to L2 learners of Chinese from beginner to intermediate levels.

For beginner learners who start to learn the Chinese language from scratch, the application will expose them to some general knowledge of characters, facilitate their learning and inspire them to learn more about the Chinese culture. For post-beginner level learners who have already acquired a basic knowledge of the Chinese language and have already learnt some characters, the application may reassure and encourage them to review what they have learnt and search for a better solution to continue expanding their knowledge and vocabulary. For intermediate level learners who have already obtained a substantial knowledge and vocabulary of the Chinese language, the application may motivate them to further develop their language learning potential.

The overall focus of this project is to assist learners in recognising, identifying, comparing and categorising Chinese characters. It is intended to enable learners to build up their own vocabulary or character pool, as this is considered to be the most difficult area of learning Chinese.

³ Refer to the sitemap of the application in Appendix 1.

If learners master the approach of how to learn and build up their own vocabulary pool, they can then read and write Chinese much more easily at a later stage and master the language in an efficient and effective manner. A solid comprehension of the use of characters could also improve learners' confidence to speak Chinese and build up their own sentences.

1.4 Conclusion

It has been identified that a large problem-area for L2 learners of Chinese relates to the learning and memorising of the vast amount of Chinese characters, given that these characters do not mean, look or sound like anything that is familiar to them. In a questionnaire posed to them, learners have expressed the need for a “flash card” approach that could be helpful and would have a high rate of repetition. The design of my multimedia project is based on the results of a needs analysis and data collection and has the objective of meeting the needs of L2 Chinese learners in a practical way.



Chapter 2 Literature Review

It is necessary to conduct a literature review on the theoretical value of a planned project, instead of simply assuming that it will truly serve the purpose for which it was intended. Three major issues will be addressed: the first is the linguistic or “language learning” value and methods of the Chinese Character Challenger in the light of both older and modern-day SLA theories. The second issue relates to cognitive psychological learning theories and the information they provide on useful learning strategies. This provides a basis for the third concern: evaluating the role of advanced technology and the application thereof in language learning.

2.1 Second Language Acquisition theories

Second Language Acquisition (SLA) can be defined as the study of the way in which people learn a language other than their mother tongue, inside or outside of a classroom (Ellis 1997:3). It is stated by Mitchell and Myles (1998:40) that the SLA theoretical research agenda continues to focus on a number of fundamental issues carried forward from the 1970s. These issues include: the role of internal mechanisms; the role of the first language (L1); the role of psychological variables and the role of social and environmental factors. Levy (1997:71) also believes that SLA research is one of the contributing disciplines of CALL. The literature survey will aid in the process of determining whether the content of certain SLA theories can be applied in a practical way to the Chinese Character Challenger.

2.1.1 Language transfer

Ellis (1997:51) defines L1 transfer as referring to the influence that the learner’s L1 exerts over the acquisition of an L2. According to Odlin (1989:4), there are a number of reasons for language teachers and linguists to consider more closely the problem of transfer. Teaching may become more effective through a consideration of differences between languages and between cultures.

The role of the L1 in SLA has been a topic of research in Linguistics since the 1950s. Fries states in the foreword to *Linguistics Across Cultures*, a highly influential manual on contrastive analysis by Lado (1957), that learning an L2 constitutes a very different task from learning the L1 and that the basic problems arise not out of any essential difficulty in the features of the new language themselves but primarily out of the special “set “ created by the L1 habits (Odlin 1989:15). Although there is a great deal of criticism about the transfer theory along with the developments in the field of Linguistics, Odlin (1989:4) argues that there is a large and growing body of research that indicates that transfer is indeed a very important factor in SLA.

When discussing language transfer, grammar plays an important role. Chinese grammar is not complicated, but it is fairly different from that of English or any other European language. Word order, for example, has been a great problem for L2 learners of Chinese, which could be caused by interference from their L1. Odlin (1989:85) claims that word order has been one of the most intensively studied syntactic properties in linguistics, and in SLA research. There are now numerous studies of learners’ word-order patterns. The study of L2 word order has been useful not only for a better understanding of transfer, but also for a better understanding of discourse, syntactic typology, and other factors affecting SLA. A typical incorrect sentence that learners often make is “I study the Chinese language at the University of Stellenbosch”, which is a grammatically correct sentence in English whilst the correct version in Chinese should be: “I at the University of Stellenbosch study the Chinese language”. I have been trying to correct this repeatedly and constantly, but mostly fail to get learners out of their L1 habit.

For this reason, I have chosen for my project certain areas with distinctive differences in grammar, analysed and presented them, and given concrete examples in order to make learners aware of the differences between their L1 and Chinese. In the project, I have made a special page to present the sentence structure of Chinese and created a PowerPoint presentation to further illustrate this. With the design of a self-test, I have given learners the opportunity to reconfirm their learning result.

2.1.2 Contrastive analysis

Contrastive analysis involves a set of procedures for comparing and contrasting the linguistic systems of two languages in order to identify their structural similarities and differences (Ellis 1997:138). This theory implies that effective teaching would concentrate on areas of differences between the L1 and the L2 (Mitchell & Myles 1998:24). According to the theory of contrastive analysis, the Chinese Character Challenger should contain a component that specifically focuses on the explanation of differences between Chinese and English (given that English is the L1). The project could highlight these main areas of difference by showing their origins, composition, structure, and by presenting the differences in various categories.

In time, two positions developed with regard to contrastive analysis: a strong versus weak view. The strong view maintains that one could make predictions about learning and hence about the success of language-teaching materials based on a comparison between two languages (Gass & Selinker 1994:60). However, given the empirical evidence that many errors were not solely the result of transfer, a weaker form of the hypothesis was proposed. According to this version, only some errors are traceable to transfer and contrastive analysis thereby needed to be used hand in hand with error analysis (Ellis: 1994:308).

2.1.3 Errors and error analysis

The conceptualization and significance of errors took on a different role with the publication of an article by Codor in 1987 entitled “The significance of learner errors” (Gass & Selinker 1994:66). As the name suggests, error analysis is a type of linguistic analysis that focuses on the errors⁴ learners make. Unlike contrastive analysis, the comparison made is between the errors a learner makes in producing the L2 and the L2 form itself. It is similar to the weak version of contrastive analysis in that both start from learner

⁴ Codor was careful to distinguish between errors and mistakes. Mistakes are similar to slips of the tongue and are generally one-time-only events. The speaker who makes a mistake is able to recognize it as a mistake and correct it if necessary. An error, on the other hand, is systematic. That is, it is likely to occur repeatedly and is not recognized by the learner as an error (Gass & Seliker 1994:67).

production data, although with contrastive analysis the comparison is made with the L1 and with error analysis it is made with the L2 (Gass & Selinker 1994:67).

In the planning stages of the multimedia project, error analysis seemed to be a useful means of determining the focus and the content of the Chinese Character Challenger. At first sight, it may seem rather odd to focus on what learners get wrong rather than on what they get right. However, Ellis (1997:15) states that there are good reasons for focusing on errors. First, they are a conspicuous feature of learner language, raising the important question of 'Why do learners make errors?' Second, it is useful for teachers to know what errors learners make. Third, paradoxically, it is possible that the occurrence of errors may actually help learners to learn when they self-correct the errors they make.

It seems obvious that the first step in analysing learner errors would be to identify them (Ellis 1997:15), which is what I have been investigating over the past few years. I have carefully observed learners' performance in and out of the classroom and captured their errors, categorised them, further analysed them and verified them. I believe that both learners and teachers can benefit from error analysis. Learners will not be inclined to repeat those errors and teachers will pay special attention to those errors and make learners practise the correct version.

In the multimedia project, the content was carefully selected to focus on areas of difficulty that have been identified from previous errors made by learners from their class performance, their assignments and exams. Learners will learn from their own errors and upgrade their level of language by going through the learning process and finding out where the errors are and how to correct them. Yang (1997:109) states that when students recognise or memorise and write characters, some of the characters are similar in shape and can be easily confused. To put these characters together and compare them will give learners a strong foundation, and enable them to memorise and identify these words.

All the flash cards in the project are characters that learners often confuse. These were then categorised by shape, sound and meaning in groups - depending on which aspect leads to confusion. By giving example sentences written with two similar, yet different characters, learners can easily identify the difference and memorise them.

2.1.4 Modern UG-based theories

Noam Chomsky explains language acquisition in terms of Universal Grammar (UG), which governs language by a set of highly abstract principles that provide parameters which have particular settings in different languages (Ellis 1997:65). UG-based theories acknowledge the importance of both input⁵ and internal language processing. Learning is said to take place as a result of the complex interaction between the linguistic environment and the learner's internal mechanism (Ellis 1997:44). The Chinese Character Challenger contains flash cards that have been designed to provide positive, negative and explicit input.

The flash cards assist learners in comprehending certain semantic and syntactic aspects of the Chinese language. They have been created for learning and reviewing purposes and to display the relationship between the newly learnt characters and the ones that they have already learnt at a previous stage, with the purpose of building up the rearrangement. Within the exercises, learners discover their mistakes and are given the chance to repeat the correct version over and over until it is understood. Yang & Cui (1997:91) are of the opinion that using flash cards to display characters is a good method of positive input at the initial stage of teaching, since they are flexible, convenient and may save time. The displaying of the characters can be used as a repetitive exercise or for intensive review.

⁵ Input has been described to be positive, negative or explicit. The term "positive input" normally refers to all authentic sentences of a language produced in the presence of a learner. These are positive examples of what people actually say (Cook & Newson 1996:90) and do not contain any form of correction. "Negative input" is used in the context of a learner-expert relation between the learner, child, or participant, and the teacher, parent, or researcher. The former are meant to interpret that they have not performed like experts and should try again with different behaviour (Schachter 1991:90). "Explicit input" refers to language which consists of descriptive information about language, i.e. metalinguistic information (Beck, Swartz & Eubank 1995:178).

In addition to the input provided by the flash cards, a learner's forum exists within the multimedia project to facilitate interaction between the users and the designer. The learner forum constitutes a platform where learners can make a contribution, give their opinions and feedback for the purpose of improving and upgrading the website and of course ask questions.

Having access to answers will expose learners to more explicit input and could enrich their learning experience. It is evident that both input and collaborative interaction play a very important role in language learning. Showing learners flash cards and giving examples of the vocabulary will help them to comprehend and process the language message they are receiving. Providing the forum is to create a collaborative learning environment for learners to learn more effectively.

2.1.5 Motivation in SLA

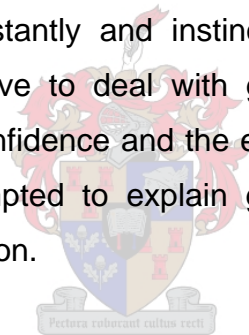
The L2 learning experience is different for each individual and learning does not occur without motivation. Ellis (1997:141) defines motivation as "the effort that learners put into learning an L2 as a result of their desire or need to learn it." Four types of motivation have been identified. The first is instrumental motivation, relating to the degree of effort a learner puts into learning an L2 as a result of the desire to achieve some functional goal, such as passing an exam. Second, integrative motivation relates to a learner's desire to identify with the L2 culture. The third type of motivation is intrinsic, where a particular learning activity is the motivating factor. Fourth, resultative motivation is a form of encouragement to learners by means of the success that they attain in the learning of the L2 (Ellis 1994:140-143).

In my experience, learners are often fascinated by the Chinese culture and are receptive to the integrative kind of motivation. Their interest, curiosity and enthusiasm over China, its people, its history and its culture have motivated many learners to learn the Chinese language. As a matter of fact, many of my students take Chinese as an optional subject in addition to their majors.

One of the greatest obstacles to L2 learners of Chinese is a lack of confidence. This psychological fear of the unknown seems to penetrate

learners' heads from the very beginning of the course and is reflected in every group of learners. To tackle this, one of my teaching strategies is to inspire, to encourage and to motivate them in every possible way in order to raise their confidence. I apply this strategy throughout my entire project. The continuous message given to the learners states: "If you master one, you will master a hundred". (refers to learning characters) In other words, quality and quantity go hand-in-hand. I repeatedly emphasise to learners that mastering the Chinese language does not require exceptional intelligence, but confidence, persistence and an applicable method.

The fact that Chinese has a rather uncomplicated grammar is also a great motivating factor. In the multimedia project, I gave a list of a number of complicated grammatical items that exist in other languages, but simply do not feature in Chinese, hoping for learners to rule out the psychological fear of the unknown that they constantly and instinctively show. Once learners realise that they will not have to deal with grammatical aspects such as conjugation, it raises their confidence and the endeavour appears to be more feasible. I have also attempted to explain grammatical phenomena in a simple way for the same reason.



In the case of recognising characters, I have often noticed that presentation plays a significant role. For example, if I present a whole paragraph on paper for learners to read, they immediately feel intimidated and the psychological fear of the unknown blocks them from interpreting the characters that they have already learnt as if they are reading something "Greek". By presenting the same material in separate sentences, the situation changes and learners can actually read the characters more easily. As a result, I have designed my project in a simplified format with short sentences, tried to repeatedly use the characters that the learners have already learnt in order to boost their confidence and make them realise that the content is within their capacity of learning.

SLA theories encompass the current concepts and issues in the teaching and learning of an L2. I have only pinpointed a few prominent issues which relate

to my project, such as language transfer, contrastive and error analysis, types of input and motivation. My objective is to strengthen the weak points in the areas of learning and to explore the possibilities to solve learners' problems during the learning process in order to improve the potential effects of learning.

2.2 Cognitive learning psychology and Constructivist learning theory: the key elements of learning

Recent cognitive psychological theories have given birth to the concept of constructivism. According to constructivism, learning is viewed as a dynamic process where people construct their knowledge of the world. Learning, not teaching, is primary. The role of teaching is not to impose knowledge structures, but to facilitate this constructive learning process. This leads to a much more learner-centred environment in which the learning experience can take place (Boyle 1997:70).

2.2.1 The learning process

The essence of constructivism is “learner-centred” learning. The constructivist learning theory advances that knowledge is not obtained by the demonstration of the teachers, but is obtained by learners under certain situations relating to their social and cultural background, the help they receive from their peers, how they make use of learning materials, and by understanding the nature, rules and relations of learning issues (Shi, Huang & Ren 2003:18).

I understand the process of learning to entail the following: first of all, learning is an active construction. It implies that learning is a knowledge construction process and it invites an active, constructive and positive attitude. Secondly, learning is an autonomous process of discovery. The learning process should therefore be independent, with learners taking initiative and explore creatively. Thirdly, the learning process becomes more effective with an efficient learning strategy. Finally, all learners, and in particular, language learners must experience this whole process. My project has been designed for learners

along the metaphor of a journey, a learning process that encourages a positive attitude, confidence, joy and a helpful and valuable learning strategy.

Taking the project content as example, the Chinese Character Challenger emphasises character learning by displaying flash cards. It also networks (hyperlinking website) and diversifies (multimedia effect) the learning material relating to the character learning to present a variety. Variety is necessary to avoid boredom in learning, since we are dealing with a long “journey” or process.

2.2.2 Learning by association

Learning must stimulate learners’ creativity and imagination. Mitchell and Myles (1998:79) explain that connectionism, or parallel distributed processing, likens the brain to a computer which would consist of neural networks or complex clusters of links between information nodes. These links or connections become strengthened or weakened through activation or non-activation respectively. Learning in this view occurs on the basis of associative processes, rather than the construction of abstract rules. In other words, the human mind is predisposed to look for associations between elements and establish links between them. These links become stronger as these associations keep recurring, and they also become part of larger networks as connections between elements become more numerous.

I personally feel that the above explanation describes exactly the language learning process which results in the neural networking of one’s brain: the association, activation and connections between information nodes. By repeatedly showing learners the association among characters on flash cards, in exercises, in scrabbles, in grammar tips and so on, the single character is rearranged with other characters and then functions in a different context. The process of display helps learners understand better, imitation and repetition identify and further intensify the information of characters; the information nodes (characters) are strengthened by activation and networks and connections are created.

As an example, let us consider the snowballing scrabbles (refer to the sitemap of the project “reference” section in the main menu) where each sentence must start with a character from the previous sentence. The structure in this exercise involves high frequency repetition, encouraging the creation of links and connections between the characters. This activation will strengthen the memory and explore the opportunity for further association with other characters. The extended vocabulary provided in the application serves the same purpose of expanding learners’ connections, based on the threshold vocabulary of one hundred characters to obtain a larger network of characters.

To summarise, the golden rule of learning Chinese characters is to associate new characters with those that you already know, to activate learnt characters, to rearrange and to network them in order to acquire a stable language base.

2.2.3 Learning autonomously

Learners should be their own boss during the learning journey. As every learner has a different way of acquiring new knowledge, learning should remain the initiative of the individual. When operating a computer multimedia application, learners are encouraged to work on their own, to brainstorm in their own way and to construct their own knowledge pool in the way that they prefer.

Boyle (1997:71) states that constructivism proposes a radically different approach. The central tenet is that knowledge of the world is constructed by the individual. The person, through interacting with the world constructs, tests and refines cognitive representations to make sense of the world. Learning rather than instruction becomes the focal issue.

For learners, the Chinese Character Challenger is entirely optional and not compulsory. The information provided by the project is intended to encourage learners’ initiative for learning; the design is intended to enable learners to use with joy and to gear up their confidence. I believe that only when learners are encouraged and motivated to enjoy learning, are given the necessary facilities and are provided with a learner-centred environment, can they learn with the

greatest autonomy. I designed the project to serve as a learning platform with some of the authentic materials and sources to promote learning autonomy.

Learning in this view can be seen as the movement from controlled to automatic processing via practice (repeated activation). When this shift occurs, controlled processes are freed to deal with a higher level of process, thus explaining the incremental (step-by-step) nature of learning. It is necessary for simple sub-skills and routines to become automatic before more complex ones can be tackled (Mitchell & Myles, 1998:86).

The multimedia project provides supplementary courseware for learners' self-study and self-testing. Through the learning process, learners will change from controlled and conscious activities to automatic ones by repeated practice and upgrade to a higher level, so as to manage more complex knowledge.

The Chinese Character Challenger contains a variety of exercises and vocabulary lists for learners on different levels. Those who manage to cope with the basics can continue to tackle more complicated exercises. The incremental nature of learning will eventually be discovered by the learners themselves. Autonomy is the result of individual initiative and the control of learning will gradually become automatic.

2.2.4 Learning strategies

The learning process should be a sustained one, making it important to employ learning strategies during the process. Ellis (1997:76) defines learning strategies as “the particular approaches or techniques that learners employ to try to learn an L2.” I employed cognitive learning strategies in my project, referring to those strategies that are involved in the analysis, synthesis, or transformation of learning materials. An example is ‘recombination’, which involves constructing a meaningful sentence by recombining known elements of the L2 in a new way (Ellis, 1997:77). The flash cards in the project have everything to do with recombination,

rearrangement, reassurance and reconfirmation based on language elements that have already been learnt.

Learner participation and attitude are also important factors. Ellis (1997:77) states that good language learners are very active (i.e. they use strategies for taking charge of their own learning), show awareness of the learning process and their own personal learning styles and, above all, are flexible and appropriate in their use of learning strategies.

By encouraging and applying cognitive strategies in the use of the software application, I provide learners with plenty of room to present their individual potential, to be in charge of their own learning process and to adapt to their own personal learning styles. For instance, the structure of the project is flexible for different learning styles. Learners can choose to focus first on their weaker points in learning Chinese characters, or to start with the content which interests them most. They can also choose to deal with a small chunk of information which they can finish within the amount of time available to them. The way in which learners obtain information, the style that they use to process the information and the conditions on which they base their learning are all very individualised. It is up to the designer to respect these differences and accommodate them. The strategies employed can be numerous, the purpose is the same one.

The Chinese Character Challenger has incorporated and applied a number of learning theories stemming from cognitive psychology. Learners are encouraged to learn by association, to learn autonomously and to develop their own effective learning styles. Applying these theoretical learning concepts to CALL applications which have been developed tremendously over the last 20 years, one needs to consider changing the way from imposing knowledge to facilitating the constructive learning process and redefining the role of teaching, as described by Boyle (1997:70).

2.3 From Computer Assisted Language Learning (CALL) to Value Added Language Learning (VALL)

Computer Assisted Language Learning (CALL) is defined by Levy (1997:1) as “the search for and study of applications of the computer in language teaching and learning”. This section firstly deals with the development of CALL, its possible application to the Chinese language, the definition and nature of Value Added Language Learning (VALL) and the relationship between CALL and VALL.

2.3.1 CALL and the information revolution

As we enter the 21st century, the concept of “learning” has been newly paraphrased and defined. Along with the developments in computer and Internet technology, there have also been major growth and progress in language learning theories. Levy (1997:22) explains that whilst significant change was occurring in theories of language, language learning and language teaching, rapid change was also taking place in computing.

According to Chapelle (2001:1), everyday language use is so tied to technology that learning language through technology has become a fact of life with important implications for all applied linguists, particularly for those concerned with facets of SLA. Recent developments pose tremendous challenges to the conventional and traditional way of teaching and learning in the classroom. One challenge for language teachers is to shape some of their computer-using experiences into a language-learning experience (Chapelle 2001:2), something which does not constitute an easy task.

At the present time, authentic teaching materials have never been so accessible and information access has never been so globally oriented. This explains why the possibility to enhance language teaching techniques with the development and the assistance of computers is appealing. Language learning is now part of an information revolution, which holds to be very promising.

According to Warschauer & Kern (2000:7), shifts in perspectives on language learning and teaching have paralleled developments in technology from the mainframe to the personal to the networked computer. One could reason that these parallel developments in language theory and computing involve a mere coincidence, but there have also been arguments for a 'mutual need.' The information revolution had been calling for advanced technology and the developed technology requires a higher standard and new concepts of teaching and learning. CALL comes into the right computing age and its growth and development are embedded in the information revolution.

CALL is modern and constitutes an alternative way of teaching and learning. It is now necessary to determine whether it can also add value in the teaching and learning of the Chinese language.

2.3.2 The value of CALL in learning the Chinese language

According to scientific research conducted in the 1980s, learning Chinese characters requires both left and right brain functions, since characters are processed in two phases. The right part of the brain plays the greatest role in single character recognition, whereas the left part of the brain is used when the relationship between characters is analysed (Dai 1999:42). Similar findings were later reported by Muzhen Yang and Zhaoming Zheng, who declared that the right brain has a stronger ability in processing character shape, while the left brain is relatively better in the sound and meaning aspects of the character. Both parts of the brain are therefore used at the same time with reading Chinese characters (Dai 1999:42).

A different line of research has shown that a multimedia package that incorporates both left-brain and right-brain activities can increase learning and retention as compared to a package limited to materials that require only one side of the brain to process information (Fenrich 1997:108). This points towards a link between effective Chinese character learning and CALL, but there is evidently still a great deal of room for research in the field of neuroscience and the acquisition of Chinese.

The structural complexity and difficult memorisation of Chinese has also created an ongoing debate of whether the Chinese language should be simplified and whether its continued use is sustainable in the new technological era. Interestingly enough, the Chinese language has its future in the computing world, since Chinese characters take up a lot less computer storage space than any European language.

Based on the above research findings, the Chinese language is very likely to be continuously used and developed in the area of computing. Therefore, educational multimedia applications in teaching and learning the Chinese language may be expected to improve in the future.

2.3.3 The definition and the nature of VALL

Value Added Language Learning is my own paraphrase and illustration that I have derived from the business world. We all live in a commercial world where everything has something to do with value. For instance, every enterprise's greatest concern is to maximise the shareholders' profit on a daily basis. The importance of value can be attributed to learning and language learning in a similar way. VALL can be defined as a way to add extra value to learning, with an efficient approach and a drive towards higher quality. VALL entails generating learning with broader perspectives, new concepts and definitions, authentic and updated content, unconventional creation, optional approaches, a positive manner, active autonomy and effective outcomes.

With VALL, language learning is promoted with a fresh energy and obtains a recognised academic result. In other words, the value of learning is not only enriched, but value also increases within a given time and the quality is positively enhanced. To develop more traditional and conventional ways of language learning into VALL, teaching must also be improved: one must change traditional perspectives and keep abreast with the latest advanced technology in the professional area, such as CALL conceptualisation and practice.

2.3.4 The relationship between CALL and VALL

Levy claims that CALL theory is a relatively recent, interdisciplinary field of study that has been subject to the influence of a number of other fields and disciplines (Levy 1997:47). There is still discussions to be pursued over issues such as how to bridge the gap between CALL theory and practice; how to achieve both the effectiveness and usability in the application; how to define the role of teacher and the role of the computer; and how to transform the original pedagogical design concept conceived into the actual end product of the CALL application.

The above issues have been described as “closeness of fit” by Levy (1997:163). One of the most fundamental issues in the field of CALL is the “fit” between the computer’s capabilities and the demands of language pedagogy. Neither is static: both have undergone very significant developments in the last decade and continued change is to be expected.

In principle, when applying CALL conceptualisation and practice, any educational application designed should be made usable to serve as a tool, or a tutor. The idea is not to replace the teacher, but to assist and to facilitate language learning in order to add to the value of learning. There are, however, still many practical problems to discuss and to solve. Teachers should ensure that the designed CALL applications truly address the needs of the learners.

The ultimate aim is to establish a fit between the pedagogy, methodology or theory of learning, and the author’s perception of the capabilities and limitations of the technology. Then, for any given circumstance, the closeness of fit between the two can be assessed. If the fit is not good, then the use of technology will probably be rejected; alternatively, if the fit is a good one, then the CALL option is probably feasible (Levy, 1997:164). Needless to say, the learning value will obviously be added when the notion of “closeness of fit” is being addressed and applied. In the multimedia project, I have made an effort to design an experimental prototype that merges both the theory and practice of CALL. I have made use of computer technology and multimedia effects to maximise the effective outcome with the aim of reaching the “closeness of fit”

described by Levy. The product aims to create a learner-centered, automatic, positive and authentic learning environment in order to achieve VALL, to bridge the gap between CALL and VALL, and to reach VALL by making optimal use of CALL.

The review of literature has provided me with the theoretical framework and necessary principles of language learning to design, develop, and self-evaluate my project in an objective and critical manner. With the relevant concepts and issues in mind, I constantly referred back to the theory to reassure myself that what I have produced is still in line with the described professional criteria.

Computer technology and the information revolution developed in a parallel fashion, leading to the creation and design of CALL applications. CALL can serve as a medium to obtain VALL, which is the ultimate goal. To realise the objectives of VALL, CALL must be understood, be systematically structured and designed, be precisely evaluated, and be further developed.

2.4 Conclusion

The theoretical framework that I have studied and consulted for the preparation and consideration of my project is within the domain of CALL conceptualisation. Other practical considerations were obtained by reviewing cognitive psychology and the constructivist learning theory, as well as SLA theories. It has been established that learning is an active process of discovery that requires autonomy and application of strategies by the learner. In designing a CALL project, one must consider all the elements of relevant learning theories to make learning more effective. There are still many issues of discussion with regards to the production of CALL applications and CALL designers are constantly making efforts to obtain the result of “closeness of fit”. It is necessary to continue to research, to experiment, to test students and to evaluate CALL applications both in the design stages and in completion, so as to improve CALL to obtain value in learning.

Chapter 3 - Research Design and Methodology

The next section serves as a reflection and documentation of my thought processes, the decisions I made during the entire research process and the reconstruction of my research logic.

3.1 Research methodology

The method I have used for my research and empirical work involves questionnaires,⁶ informal dialogues and focus group observation and experiments. I have chosen this method, because data capturing of language phenomena can often be a long and extended process. The data and information accumulated on different occasions and of different individuals were often diverse and varied. It took me three to four years (2001-2004) of observation and numerous times of experiments on the focus groups to collect all my research data. The data was collected from learners' class performance, assignments and exams by observation, note-taking and informal dialogues.

Collecting data is the first step. The data is both quantitative and qualitative nature.⁷ The selected vocabulary in the website ranges within Grade A and Grade B of the Chinese Language Proficiency Level Test (HSK, Han Yu Shui Ping Kao Shi, the Chinese PinYin).⁸

Analysing data is the subsequent step. I made cards of the characters that most often confused learners and caused errors, and classified them in alphabetical order. I then analysed and categorised them into the three different groups of phonology, orthography and semantics, depending on which aspect of the character led to confusion. On each card, I wrote the other similar character with which learners often became mixed up, adding the necessary translation and explanation and also an illustration of the context with example phrases and sentences.

⁶ Refer to section 1.2.

⁷ Refer to Appendix 3.

⁸ Refer to the Statistics Chart in Appendix 4.

With regards to verifying data, I can attest that during my years of teaching, I have repeatedly used the characters made on the flashcards as examples to test each new group of learners again and again - both in class and on paper. The same errors are repeated over and over again by the new learners every year. Every term, I have also made new cards according to my observations and had random dialogues with learners, in order to expand on my database.

Selecting data is an important step of the research procedure. I have carefully selected cards for my project. The principle is to choose the typical, the most frequently used and the most important ones (such as nouns and verbs). I have chosen 100 characters out of my data collection, which comes to 10% of all the characters that I collected. For each character, I have created a sentence that also contains the other similar and easily confused character. By putting both characters into the same sentence, they can be clearly and more obviously identified.

The above is my research method and procedure. I have been continuously collecting data and revising the card index system for further research purposes. As the 3rd year Mandarin course is going to be offered next year at the Stellenbosch University, the vocabulary range will be extended and changed to a higher level.

3.2 Project design

Multimedia design can be separated into two aspects: conceptual design and presentation design. The dominant strategic approach for the multimedia learning environment, which challenges traditional instructional design, is the constructivist⁹ design. Instructional design is often criticised and considered to be outdated because of it “being constrained to a predefined learning sequence” (Boyle 1997:13).

The multimedia design process can be understood to simply be a process of putting a teaching target to design and realise it via a computer (Shi, Huang &

⁹ Refer to the discussion on the constructivist theory in section 2.2.

Ren 2003:16). However, a multimedia application has the potential of adding many more assets in addition to merely interpreting teaching objectives via a computer application. A dynamic approach such as reflected in the principles of constructivism needs to be proposed to produce a highly user-centred learning environment in design. Boyle (1997:85) advances that multimedia learning environments which are facilitated by computers add an extra layer of complexity to design and thereby the quality of the learning material is enhanced.

3.2.1 Conceptual design: framework, principles and considerations

Boyle (1997:99) describes the composition of multimedia design as macro functions of the context which consist of three aspects: first, to convey the information and second, to achieve an aesthetic effect. These two aspects operate in parallel. The third is for the user to participate interactively. “These three functions involve content structuring, interactivity and creating the compositional framework” (Boyle 1997:99).

Bearing these three important aspects of design in mind, I considered my own design and also endeavoured to merge them with the seven main principles of constructivism as described below. Constructivism focuses on the fact that learning tasks should be embedded in problem solving contexts that are relevant in the real world, and that it is important for learners to see the relevance of the knowledge and skill to their lives (Boyle 1997:71).

Seven principles of constructivist design

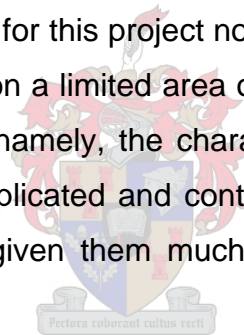
1. Provide experience of the knowledge construction process.
2. Provide experience in and appreciation of multiple perspectives.
3. Embed learning in realistic and relevant contexts.
4. Encourage ownership and voice in the learning process.
5. Embed learning in social experience.
6. Encourage the use of multiple modes of representation.
7. Encourage self-awareness of the knowledge construction process.

(Boyle 1997:72)

I also have my own ideas of design to discuss in line with the conceptual design framework and principles provided above. The following four categories and subsequent aspects have been taken into detailed consideration during the project development process. They are discussed keeping both the macro-function domain of design as well as the seven tenets of constructivist design in mind, in the following metaphorical equation: content + context + conditions = effects of learning.

3.2.1.1 Content of learning

Content is an extremely important component of the learning process. Therefore, the focus, selection and authenticity of the content is of primary concern. The Chinese language is a historical development of more than 4,000 years. It has been developed to a stage that one project of one individual cannot really make any difference or improvements in the teaching or learning it. It is important and realistic for this project not to try and cover all aspects of Chinese, but to rather focus on a limited area of the language that presents a vital and ongoing problem - namely, the character learning issue. Because characters are different, complicated and contrasting to learners' own native languages, the project has given them much attention and provided many illustrations.



The Chinese Character Challenger is aimed to be a supplementary courseware. Learners can only work in their spare time, making the quality and the quantity of the content selection a real issue. Regarding the quality, the materials must be selected from the focus area; those characters with comparison value must be selected and learners must be able to learn the differences in characters from their own errors. The level of language in the content must also be able to accommodate learners from beginner to intermediate levels. With regards to quantity, the maximum capacity of learners must be considered in terms of the workload at any given time. On the one hand, with the additional external sources listed on the website, the extended and categorised vocabulary pool as well as the learner forum, learners on a higher level can achieve their full potential and find the content interesting; on the other hand, learners at the beginner level should also enjoy

the content and be able to cope with it, which is why the number of characters is limited to one hundred. The content of the learning material is also based on authentic errors from L2 learners of Chinese.

Finally, interesting content adds flavour to learning and motivation. Learning a language can be painful if one does not enjoy it. I would presume that, since they will be working on the Chinese Character Challenger in their spare time, learners would prefer for it not to contain a vast quantity of information, not to be boring, and for it to be easy to work on at each available period of time. The main focus of the multimedia project is on characters, but it also contains other content related to characters and cultural information. By manipulating a diverse range of data, learners will be motivated to enlarge their knowledge and widen their vision of China.

3.2.1.2 Context of learning

Context is an equally important aspect and can be described as the situation within which learning takes place. A dynamic, learner-centred learning environment can be created by intuitive interaction for learners to gain knowledge more effectively in a collaborative environment. Within such an environment, learners may achieve the objective of learning by choosing the content suitable to their needs, by navigating the computer, by studying the material, by doing the exercises, and finally by completing the self-test. The process depends entirely on a learner's own decision of what to learn, when to learn and how to learn.

Intrinsically, autonomy¹⁰ is highly encouraged, as the multimedia project is designed for learning that takes place outside of the classroom and is reliant on the learner's attitude and motivation. The courseware is not compulsory, but supplementary. No marks are recorded. The progress made and the result obtained rely entirely on each individual's drive to learn.

¹⁰ Refer to section 2.2.3.

Cultural Orientation is part of the learning context. Language is closely related to culture and can be considered as part of the cultural phenomenon. I designed the multimedia project to introduce the Chinese culture to learners in order to help them understand Chinese people, Chinese culture and the Chinese language. For example, all the Q&A questions in the flash card exercises (refer to the “flash cards” section on the main menu of the application) deal with the Chinese culture. These questions were taken from the prescribed text of the Chinese Bridge Competition that was held in Beijing in December 2003.

3.2.1.3 Conditions of learning

The conditions of guidance and assistance are both needed in learning and I would like for learners to benefit from the Chinese Character Challenger in a practical and effective way. They can obtain the information they need efficiently by surfing on the website at their convenience. The information provided is envisaged to be clear, well-guided, helpful, easy to navigate and sufficient to guide the learning process.

Constant updated information is another condition of continuous learning. This first version of the Chinese Character Challenger serves as a point of departure and it will be improved on after learners have manipulated it and given their feedback. It will be updated on a constant and continuous basis and will be revised to serve the purpose of learning and to address learners' needs. It will become a library of learners' work containing and reflecting their different ideas and suggestions. Technically and ideally, the Chinese Character Challenger will be kept abreast with the latest computer technology and software development.

We are in a time of an information explosion. It is very important for learners to be able to access enough relevant information. The project aims to provide information to learners that may be necessary for them to widen their vision of learning the Chinese language.

Having a platform and encouraging participation are equally necessary. The project provides learners with a learning platform to give them the actual space to challenge themselves. They can develop their full potential by being active in learning and can also be very creative. The Chinese Character Challenger provides a platform for them to learn and to accumulate their knowledge, as well as a forum for them to participate, debate and be actively involved among other learners who share the same interests.

The benefit learners will gain from this website may encourage them to create further opportunities for other learners and to transfer their knowledge to the next group of incoming learners. I would like for learners to not only participate, but to become involved as a partner or to become a leader. By participating, one experiences, becomes involved and understands better; by being a partner, one contributes; by being a leader, one is dedicated to learning. This is what this project is all about.

The Chinese Character Challenger communicates clearly to learners that the website does not belong to the editor, but to them. It is intended to involve learners as much as possible and incorporate their way of learning. Every learner should be considered as an active partner of the website as opposed to being a passive user. Ultimately, every user should be a leader in the website to actively make contributions with a dedicated attitude, since learning requires dedication.

3.2.1.4 Effects of learning

A learning portfolio that balances content, context and condition should result in positive effects of learning. The project orchestrates and integrates both educational aspects and multimedia effects, but tries not to go overboard on the multimedia effect and thereby underplay the importance of content, context and condition.

3.2.2 Presentation design: design decisions

According to Boyle (1997:131), presentation design is grounded in conceptual design and presentation design should exploit the features of unity, harmony, balance and visual flow in order to achieve the powerful effect of perceptual clarity and simplicity. Unity refers to the wholeness of the experience; harmony describes a system fitting together; balance concerns the visual 'weight' given to each component and the distribution of these objects on the screen, and finally, visual flow relates to how attention should be drawn round the objects displayed on a screen in a way that reveals the relationship between the elements (Boyle 1997:127).

From a more practical perspective, I tend to agree with Boyle (1997:130) that "we often cannot solve presentation problems on the basis of principles alone, but that we need to invent, represent, experiment and refine. This can often be a fun part of multimedia development". I very much enjoy the process of "shaping a coherent and attractive system" (Boyle 1997:131), and experienced both the "fun part" and the frustration of it.

3.2.2.1 The basic elements: text, graphics and colour

a. Banner

"If you master one, you will master a hundred." I designed the project with exactly one hundred flash cards of characters. The metaphor is: if you know the approach to learn one character, you can learn a hundred or more characters very easily. Even though there are 60,000 Chinese characters, only 2500-3500 are used very frequently and these first 100 characters will definitely get you started. I found that working with an exact figure, such as a hundred, helps to motivate learners and to build up their confidence. It defines a goal that can be achieved.

b. Text font

I have chosen to work with only one font, Arial, for the sake of clarity and consistency. The font of the characters has been slightly enlarged to size five in order to facilitate character reading and recognition.

c. Logo

“Happiness” is the character used as the logo to correspond with the banner stating: “if you master one, you will master a hundred”. The “happiness” character denotes cheerfulness and luck in the Chinese culture. I found it important for this character to appear on every page of the website. The essence is that if you manage to know this single character, you will obtain happiness and find the path of success by learning all hundred characters in the flash cards.

d. Graphics

In order to make the web page more attractive and to further illustrate some abstract concepts and provide cultural context, I have added some graphics to the webpages. For example, a reference to the Yantze river in a cultural question in the exercise section was accompanied by an illustration of this river for visual impact.

e. Colour

Red is most definitely the favourite colour of Chinese people. It is used to symbolise good luck, happiness, prosperity and success. As red is not an easy colour to read, I mostly used it on the entry page of the website. The colour gives learners a striking introduction and is appealing by bringing some flavour of the Chinese culture into the website. The various colours used in the website are all blended and incorporated within the graphic of a dragon (an authentic Chinese symbol) on every page. It has three main colors: red, blue and brown. By adding brown and blue, I wished to bring in two elements of historic essence of China: the colour of the Forbidden City Wall and the colour of the antique elite of the Chinese culture.

3.2.2.2 Dynamic and integrated multimedia: animation, sound and video

a. Flash

In order to give the website a more appealing and striking effect, I have used a Flash animation to display the title of the project to indicate that learning Chinese characters is a process of one step at the time. As Chinese characters are quite difficult to write, I also made use of a Flash animation to

explain the basic strokes and to demonstrate the order in which the strokes of the character should be written.

b. Music

The website brings the audience into a Chinese environment straight from the beginning, with the use of traditional Chinese music. Learners have the option to stop the music if that is their preference. I have also added background music to certain exercise pages to serve for entertainment and relaxation purposes. The music is a traditional Chinese piece, played on ancient Chinese instruments.

c. Video clips

In order to attract learners' attention to the list of outside resources, I have used a video clip of a globe with an animation effect to represent the Internet world. It implies that no matter where the learners of Mandarin are, they can exchange their opinions and associate with each other by means of the Internet. All the graphics, music and video clips were selected from various Internet websites for the initial presentation of the Chinese Character Challenger, which will only be available to the Mandarin learners of the University of Stellenbosch via the university intranet.

3.2.2.3 Other elements of effect

a. Snowballing Dragon Scrabbles

There are characters displayed on every page on the right hand side of the website. One exercise that encourages the memorisation of the characters entails dragging on the dragon and then starting a sentence with the word in the previous sentence. The red characters are the ones that must be used to create the next sentence. In the end, if learners draw a line through these red characters, they will find a firing red dragon in front of their eyes jumping and dancing, representing the symbol of China.

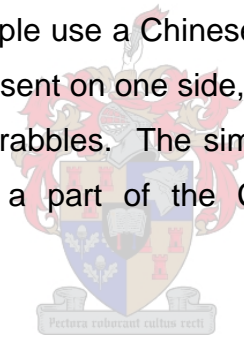
b. Chinese door

The Chinese door culture originates from thousands of years ago. The Chinese people use the door to symbolise family, community, reunion,

harmony, integrity and nationality. The Chinese are within their own country and their own culture. The new “open door policy”, which denotes the reformation of economy, implies that China, as a country, will open up to the rest of the world. The door also symbolises the door of any school. In China, every school and university has a big entrance door which is guarded. My website is a character learning library that you can enter to learn. As a designer, I led you to the door, but it is up to the learner to do the rest. As a lecturer, I intend to guide you to a correct approach, and once you walk through the door, you will find the way to do it.

c. Chinese couplets

Chinese couplets are the written poems pasted on both sides of the door during the Chinese New Year. The poems written are promising words for the next year. They are usually symmetrical: they refer to a happy life, prosperity, success, and good luck. People use a Chinese brush to write the characters. I used these couplets to represent on one side, the main menu for the website, and on the other side, the scrabbles. The similarity of this presentation to a traditional poem alludes to a part of the Chinese culture and Chinese calligraphy.



d. Chinese numbers

In the Chinese language, numbers can represent many things. People use numbers in language idioms to express different meanings. For example, the following idiom: “yi xin yi yi” (PinYin) meaning “being devoted to only one person or thing” uses the number “one” in its message. As numbers are a very basic knowledge component of Chinese characters, I selected twenty idioms, each incorporating a number, to present a language element.

With the introduction of cellphones, Chinese youngsters have found a way to communicate SMS messages by making use of numbers that sound similar to words. For instance, “wo ai ni” (PinYin) meaning “I love you” can be transcribed into the numbers “5,2,0”, that constitute a much shorter and convenient way of sending the message. An example in English would be “gr8” instead of “great.” I assumed that learners would find Chinese SMS

messages by numbers quite entertaining, which will reinforce their knowledge of numbers.

e. Cyclical sentences

The teacher led you in through the door, so studying Chinese is up to you... Once learners finish the scrabble exercise, the website allows them to go back to the first sentence from where they started. The first sentence of the scrabble is: “to study the Chinese language,” which implies that learners start and finish with the same sentence that reminds them of their learning objective.

f. Challenger

A “challenger” is a person with a pro-active personality. In the categorised vocabulary, I put “challenger” as the last word to navigate learners back to the title of the project, the “Chinese Character Challenger”. This is to indicate that learners can make challenging Chinese characters their lifetime occupation.



3.2.2.4 Overall presentation

In order to accommodate an extended range of online learners, I designed the project as a website with the webdesign software Dreamweaver. As a character is like a picture, it must be easily seen and read and sometimes requires explanations. I chose to use tables or charts to illustrate this. There are 28 charts¹¹ in the website, each presenting a topic in a clear table of rows and columns. These are self-explanatory and easy for learners to see and use for reference purposes. For certain difficult grammatical structures, I added PowerPoint slides for further explanation.

The website presentation is educational and provides a considerable amount of information and external resources. The structure of the presentation is systematic with easy navigation and consistency. It is intended to be user-

¹¹ Refer to Appendix 3.

friendly with the overall layout being simple and transparent. The entry page and home page attempt to be appealing to learners.

The application is a website consisting of 80 pages. For the sake of clarity and consistency, I have structured the presentation to be a simple and self-explanatory. In total, the content is structured in 10 main parts which are presented in the main menu on each page of the website: home, introduction, features, basics, radicals, flash cards, grammar, reference, forum and sitemap.

The presentation content mainly deals with Chinese character learning and the Chinese culture. There is an introduction to the website leading to the main theme: the Chinese characters, which includes pages on characters basics, radicals in characters, flash cards and exercises. In addition, I have also displayed a grammar section in order to help learners deal with certain areas of Chinese grammar and there is also a reference section for learners to check and review the work they have already covered. A learners' forum is provided for all forms of feedback, and finally, a sitemap is made available for navigational purposes.

3.3 Conclusion

An educational multimedia project is meant to be an integrated construction which involves both theory and practice. I have based many of my decisions for the application on theoretical principles of design. There are so many detailed elements that have to be taken into consideration during the design process, that one is limited to certain choices. In order to achieve the objectives of language learning, design choices have to be made effectively and have to be theoretically sound. Boyle (1997:83) claims that constructivism represents the dominant paradigm in educational multimedia design, since it has a much stronger base in the psychology of learning and cognitive development. It provides a more 'liberating' view of the learner, which fits well with the opportunities offered by hypermedia technology.

Chapter 4 Discussion and conclusion

4.1 Discussion

Whilst working on the Chinese Character Challenger, a number of issues were raised from the initial feedback provided by learners. This mostly involved whether more PinYin should always accompany the presentation of characters, and whether PinYin tones should be provided instead of numbers to indicate pronunciation. I am personally not a great supporter of having Pin Yin everywhere to assist reading. It is very likely that it will become a habit of many learners to be dependent solely on PinYin to the extent that they do not take the trouble to read characters at all. This will defy the main learning objective of the Chinese Character Challenger. After all, PinYin is not the Chinese language; the Chinese language is expressed and graphically represented by means of symbolic characters.

Some students suggested that the application should include more tests, whilst others wanted more specific explanatory notes in certain sections. As the constructive learning process differs individually, the result is never identical. Every individual therefore has his or her own opinion. I have adopted some of the learners' suggestions when I felt that it would facilitate their learning. At the same time, however, I want to give learners the opportunity to challenge themselves, which is the central idea of my project, and to inspire every learner to challenge the Chinese character. These issues, amongst others, will be assessed and discussed again when the project is put into practice.

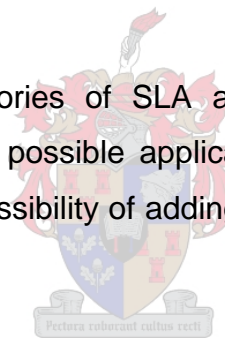
According to Chapelle (2001:52), there are five principles of evaluation for CALL. Firstly, the evaluation of CALL is a situation-specific argument. This means that CALL developers need to be familiar with criteria for evaluation which should be applied relative to a particular context. Secondly, CALL should be evaluated through two perspectives: the judgemental analysis of software and planned tasks and the empirical analysis of learners' performance. The methodologies of both types of analyses should be

considered. Thirdly, the criteria for the quality of CALL lies in linking it to research on SLA, making CALL evaluators responsible to keep up to date with the latest developments in SLA theories. Fourthly, the articulated purpose of a CALL task should be clearly indicated. Finally, the central criterion in evaluating CALL is the language learning potential.

4.2 Conclusion

The learning of Chinese characters to L2 learners is a problematic area, and has become my teaching focus and point of departure of research. After extensive data collection and analysis, I selected a hundred flash cards which were prepared and presented in my multimedia project. The main objective of the project is to assist L2 learners of Chinese to recognise, to identify and to differentiate characters in order to memorise and apply them in the correct contexts.

In the literature review, theories of SLA and cognitive psychology were discussed in relation to their possible application to the multimedia project. We went on to discuss the possibility of adding the value to language learning by implementing CALL.



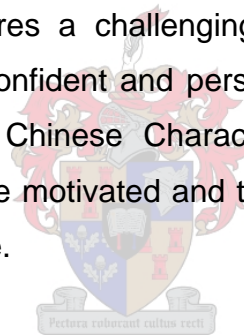
The design of the project was then considered according to a series of web design principles. An important aspiration is to add value to the language learning process by implementing CALL, by addressing practical learning challenges on an incremental basis, by taking the development of advanced technology continuously into consideration and by conducting further research in related disciplines. In designing CALL applications, designers strive to obtain the “closeness of fit” as elaborated by Levy (1997:163).

With the multimedia project, I wished to create a platform for learners who want to take the initiative to learn Chinese characters. The application may be different from other quick-and-easy dictionary-type software with easily obtainable and immediate answers, or from conversational language software where one can watch the movies and listen to the pronunciation of the L2

speaker. My project requires harder work and creative thinking from learners, facilitating a paradigm or mind-shift. The idea of a “challenge” applies to the action: the learners must challenge themselves by learning Chinese characters.

The teaching of Chinese characters is an ongoing problematic and existing research issue, which I have tried to address using a different approach and from a different angle. Whether the endeavour was successful has to be assessed by the learners themselves. There is also still a great deal of further research to be conducted in the areas of neuroscience that are related to Chinese character learning. I am keen to deepen my own knowledge in this field of study and to continue with my present research.

Finally, learning is a long journey and a constructive process. The acquisition of Chinese characters requires a challenging attitude and an appropriate approach. Those who are confident and persistent will succeed in the end. My multimedia project, the Chinese Character Challenger, aims to help learners to be confident, to be motivated and to be persistent in learning and to have a valuable experience.



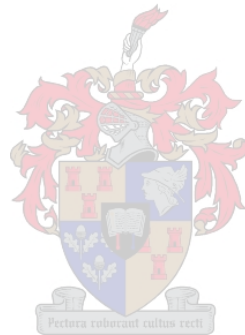
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Appendix 1

Project Sitemap

* Entry page

* Home Page

Project index 1 Introduction

Project index 2 Features

Project index 3 Character Basics

submenu 1

3.1 overview FAQ

3.2 basic stroke

3.3 strokes order

3.4 structure

3.5 word search

Project index 4 Radicals in characters

submenu 2

4.1 radicals menu

4.2 pairs

4.3 originals

4.4 categories

Project index 5 Character Flash Cards

submenu 3

5.1 flash cards menu

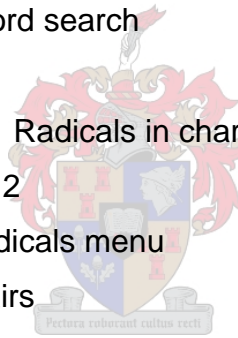
5.2 shape

5.3 sound

5.4 meaning

5.5 exercises menu

5.6 self-test



Project index 6 Tips for grammar maze

submenu 4

6.1 sentence structure

6.2 measure words

6.3 compliment

6.4 particles

6.5 time words

Project index 7 Reference sources

submenu 5

7.1 chart list

7.2 scrabbles

7.3 flash cards vocabulary
(extended vocabulary)

7.4 exercises

7.5 categorised vocabulary

7.6 websites

Project index 8 Student Forum

Project index 9 Sitemap



Appendix 2

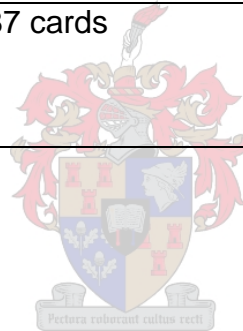
Research Questionnaire

1. What is your main problem or most difficult aspect of learning the Chinese language?
2. Why do you feel this aspect that you mentioned is difficult?
3. How many kinds of categories can characters be divided into?
4. Do you make your own flash cards?
5. Is it time-consuming to make your own flash cards?
6. Do you look up unknown characters in your dictionary?
7. How often do you look up characters?
8. Can you identify the different categories that characters belong to?
9. Will flash cards help you recognize characters?
10. What level of vocabulary should the supplementary course program reach?
11. Will related phrases help you to understand characters on flash cards?
12. In what order should flash cards be displayed in the program? By lessons on the textbook or alphabetically in general?
13. Will you enjoy some background music if you study the characters alone in the computer lab? Do you want the music to be on all the time or do you want the option to switch it on or off?
14. Will images help you understand the meaning of the characters more easily?
15. Will some exercises help you to refresh and master the characters?
16. Will a multimedia supplementary course program of characters be more interesting and inspiring for you to learn characters, than learning from the textbooks?
17. Do you prefer to learn characters in the more traditional way of working on white paper or will a multimedia supplementary course program be necessary and helpful for learning characters?
18. In what way do you try to memorise Chinese characters?
19. When you see a character, do you react in Pinyin or English first, or both?

Appendix 3

Research Data Collection

Cards Index	Quantitative	Qualitative
Identical shape (orthography)	135 cards	450 words
Identical sound (phonology)	88 cards	145 words 122 phrases
Identical meaning (semantics)	64 cards	44 words 229 phrases
Total:	287 cards	639 words 351 phrases



Appendix 4

Chart list in the project

1. Basic stroke chart
2. Stroke order chart
3. Character structure chart
4. Word Search (Pin Yin Tones chart)
5. Radicals (menu) chart
6. Radicals in pairs chart
7. Radicals originals chart
8. Radicals categories chart
9. Alphabetical Flash Cards (Pin Yin) chart
10. Fun Exercises Menu
11. Shape similar characters chart
12. Sound similar characters chart
13. Meaning similar characters chart
14. Chinese language comparison "No" board
15. Easy tips for grammar maze chart - Sentence structure
16. Easy tips for grammar maze chart - Measure words
17. Easy tips for grammar maze chart - Complement
18. Easy tips for grammar maze chart - Particles
19. Easy tips for grammar maze chart - Time words
20. Snowballing scrabbles
21. Character Flash Cards vocabulary chart
22. Fun Exercises - Idioms chart
23. Fun Exercises - Questions & Answers chart
24. Fun Exercises - Short Message Service chart
25. Fun Exercises - Scenario/Story chart
26. Categorized vocabulary chart
27. Relevant Chinese language culture websites chart
28. Extended Vocabulary chart