Faculty of Education, Language Studies and Social Work

Department of Education

Development of a Unique Instructional Paradigm for Teaching English as a Foreign Language in Korea: an Examination of its Effectiveness

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Declaration

To the best of my knowledge and belief, this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature: …………………………………………….

16th of October 2007

Date: …………………………...

Abstract

The native language of South Korea has come to contain a linguistic subset consisting of English and European loanwords and pseudo-loanwords. The notion that the English as a Foreign Language (EFL) learner is immersed in such a lexicon, and that this terminology can be utilized to effectively assist target language (Standard American English) vocabulary acquisition by the false-beginner through Computer Assisted Language Learning (CALL), was evaluated and examined.

The empirical investigation employed a within-methods (i.e. experiment and survey) design. To this end, the researcher developed and deployed multimedia-based learning environments to empirically test research suppositions. In particular, to examine how the student's knowledge of English words adapted for use in the South Korean vernacular – loanwords – is affected by their attitudes towards computerized instruction, their preference for certain methods of learning and teaching, and also by the attributes of computerized instructional packages. Ultimately, a method of instruction grounded in both CALL and linguistic theory was developed and its effectiveness for use with South Korean EFL learners in a university English program setting assayed. Scholarly accounts of the South Korean cultural learning style were also taken into consideration, and the implications such accounts hold for the implementation of CALL initiatives scrutinized.

The findings of this study are significant at the administrative, practitioner, and field level. Research outcomes indicate (a) computer use did not bias results obtained through CALL: (b) use of the L1 (first language) to assist foreign language acquisition produced positive learning gains, albeit marginal and limited, as evidenced by the persistent difficulty learners had in building new form-meaning connections between pseudo-loanwords in South Korean and English-equivalents; and, (c) multimedia-based learning developed on cultural and classroom expectations of learners, as found in the literature, was not as successful as that it was contrasted against. Consequently, results of the research come to support usability of CALL in the tertiary education sector, the existence of a 'stabilized interlanguage' on the South Korean peninsula and the need to re-profile the South Korean cultural learning style and student classroom expectations that pertain to EFL.

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List of Acronyms

ANOVA   Analysis of Variance

BNC   British National Corpus

CA   Contrastive Analysis

CAI   Computer Assisted Instruction

CALL   Computer Assisted Language Learning

CLT   Communicative Language Teaching

CMC   Computer Mediated Communication

CSAT   College Scholastic Ability Test

EFL   English as a Foreign Language

EIL   English as an International Language

ELF   English as a Lingua Franca

ESL   English as a Second Language

EPIK   English Program in Korea

FLEC   Foreign Language Education Centre

GSL   General Service List

ICT   Information Communication Technology

KNOU   Korea National Open University

L1   First Language

L2   Second Language

OCU   Open Cyber University

OT   Optimality Theory

SILL   Strategy Inventory for Language Learning

SLA   Second Language Acquisition

SSACAL	Survey of Student Attitude towards Computer Assisted Learning in EFL
SUPL	Student Understanding of Pseudo-Loanwords
UG	Universal Grammar

CHAPTER ONE
INTRODUCTION

Overview

By contextualizing the rationale behind this research and the ensuing empirical investigation, the objectives and thesis of the study are presented. Ultimately the aim is to examine the educational effectiveness of using the English inherent within the native language of South Korean English as a Foreign Language (EFL) students for the development of linguistic competence. Specifically, to investigate the utility of using Computer Assisted Language Learning (CALL) homework modules within a mandatory university English program for this purpose. In relation to this, the South Korean EFL environment and attributes of South Korean EFL students are briefly introduced, along with aspects of an approach and framework that lends itself to the application of first language (L1) use in the foreign language acquisition process of these learners. This then necessitates presentation of the research focus and questions, before a summary of the methodology employed throughout this study is detailed. The significance of this research is then taken into account, and finally, an organizational overview of the thesis is provided.

Background and Rationale

The current education system of South Korea, hereafter Korea, was shaped just over 50 years ago, tied specifically to national development goals, and came to see universal secondary and primary education provided to the population in just over a generation. To date, the grade school education system has been shaped by seven National Curriculums, with each curriculum stressing importance on one aspect of education or another. This includes, more recently, focusing heavily on languages such as English and the use of educational technology in the learning process. (Refer to Appendix One for further details concerning such aspects of the Korean educational system).

Regardless of the changes made to the teaching of English in Korea, and perhaps due to the cultural context of the local learning environment, Korean tertiary level students are still largely false-beginners of English. A false-beginner can be described as a person who has studied a second or foreign language for some time,

has a limited knowledge of the language, but is unable to functionally communicate beyond the level of a beginner. Primarily this research envisions that linguistic competence of the Korean EFL student can be effectively stimulated using loan terminology, or more precisely the English that now forms a part of the learners' native vernacular (Baik & Shim 1998; J. J. Lee, 2004; Shim, 1994). Such terminology is intrinsically tied to the original culture (Taylor & Taylor, 1995), and it is believed that such nativized lexical elements can function as cross-linguistic mnemonic keys for phrases and vocabulary learned in the target language (Daulton, 1999a). Korean learners, even at advanced levels, inappropriately and continually misuse these terms in English conversation (Lee, 2004; Kent, 2000). The use and misuse of this terminology also leads to misunderstanding and confusion in the language learning process (Shepherd, 1996). Further, students are unaware of the contextual use of such vocabulary, and the differences in meaning in Korean from the English language source (Shaffer, 1999).

Although usefulness of the English inherent within the native vernacular is recognized as a learning resource for Japanese EFL students (Daulton, 1998, 1999a, 1999b, 2003; Shepherd, 1996; Simon-Maeda, 1997), and their Korean counterparts (Shaffer, 1999), examination of the effectiveness of the practical application of such terminology for foreign language acquisition is extremely limited in Korea. Daulton (1998) highlights the scant research and empirical studies available however, illustrating the positive effect of loanwords on English vocabulary acquisition for Japanese EFL students at all levels. Unfortunately, no such experimental studies are available involving Korean learners.

In the past, extensive use of the native language in EFL has occurred through such largely criticized methodologies as Grammar-Translation, and this has since given way to approaches like the English-only policy of the Communicative Language Teaching (CLT) approach. Where the theoretical basis underlying the communicative approach derives from the view that second/foreign languages are learned in a similar fashion to first languages, and that language is a system for expression of meaning, then the primary function of language is for interaction and communication, and the structure of language reflects its functional and appropriate communicative use (Richards & Rogers, 2001). As a result, the ability to be understood is more important than the grammatical correctness of the linguistic message. The Communicative Language Teaching approach also brought with it a

shift from teacher-centred classrooms, as found in the application of methodologies like Grammar-Translation, to that of emphasis on creating student-centred classrooms.

Further, in the EFL arena, first language use by students has traditionally been viewed as a crutch, among other things, but as Weschler (1997) argues, it can provide scaffolding and act as a building block for second language acquisition. Daulton (1998) agrees with this and, along with Canagarajah (1999), views the native language as a resource rather than a problem. Meanwhile Danhua (1995) views it as a means of reference for adjusting to the target language. However, use of the first language with the target language has been seen as a hindrance, providing "interference," which learners should try to avoid. Corder (in Ellis, 1992, p. 37) does suggest that such "interference" can be recast as a learner "strategy," from which the learner's native language may facilitate the developmental process of foreign language acquisition by assisting the learner to progress more rapidly along the "universal" route when the first language is similar to the one being acquired. Aspects of the native language, in such cases, can be used as a resource providing a strategy of communication. However, as Wigglesworth (2002, p. 22) cautions, even though native language use within EFL instructional settings can be defended, "the emphasis must be on the use of the first language only where it is introduced with great care and attention, and only under clearly delineated, and predetermined conditions."

Development of a loanword approach, in the EFL teaching context, seeks to emphasize vocabulary development by considering the first language loanword bank as a useful store of knowledge. This target language knowledge kernel can then promote aspects of positive transfer, lighten the burden of learning throughout the foreign language acquisition process, and provide scaffolding and act as a building block for foreign language acquisition by using the native language as a resource and a means of reference for adjusting to the target language.

In this regard, loan terminology found in the first language of Korean EFL learners can be applied judiciously, in that its use can be for support and scaffolding of lexical content for vocabulary acquisition in the target language (Standard American English). In fact, such an approach could go one step further than CLT, by not just using English to learn English but applying the English inherent within the native vernacular, to assist in the foreign language acquisition process of the false-

beginner by stimulating positive language transfer. Nation (1990) provides support for such use of the first language, in that it can assist in lightening the burden of learning. A bridge of linguistic commonality between Korean and English, and a bridge between the initial learning gap of these two languages, could then be provided. Further, Cook (1993, p. 92) affirms that "the multi-competence viewpoint that the foreign language learner's mind contains a double system in which two languages are used" should be considered within EFL environments, "rather than concentrating on L2 learners only in terms of their use of the second language."

Constructing an appropriate EFL framework for the use of loanwords for vocabulary acquisition in the EFL Korean context first requires determining useful linguistic data that can assist false-beginners with their English vocabulary acquisition. This will stem from previous research (see Kent, 1996). Development of such a framework needs to centre on an approach, or model, that provides the learner with an intellectual toolbox from which they can develop appropriate vocabulary acquisition and construct foreign language knowledge. This approach must extend to include a variety of language activities, comprising of those already familiar to the learner, from which the Korean EFL student can utilize their existing target language competence. This competence takes the form of the 'loanword bank' and will be utilized in order to facilitate learning and guide students along the foreign language acquisition and development pathway through one of two instructional strategies. These two instructional strategies are packaged in the researcher developed multimedia-based CALL formats applied in this study.

The first format is used in CD 1, a traditional teaching oriented module, which is behaviouristic CALL phase focused (see Warschauer & Healey, 1998), and based on a restricted CALL approach (refer to Bax, 2003). The design matches closely with what the literature presents as a traditional view of Korean education, behaviourist based transmission model or "learning as knowledge-absorption model" (Chun & Plass, 2000, p. 160), and with learner expectations (Cortazzi, 1990; Eastmond, 2000; Finch, 2000; Hofstede, 1986; Joo, 1997; Min, Kim & Jung, 2000; Park & Oxford, 1998). As such, this module maintains a focus on 'computer as expert', and is thereby perhaps more culturally compliant than the second module. Such learning systems are seen to take on the role of drill master (Backer, 1995), tutor (Taylor, 1980), or magister (Higgins, 1986). "The computer-magister knows the truth, intervenes to guide the student toward the truth, and then judges the student's

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performance" (Backer, 1995, p. 3). As Deubel (2003) highlights, assumptions of the behaviouristic pedagogue, found within the restricted CALL approach, see students learn by doing, experiencing, and engaging in trial and error.

CD 2, the edutainment oriented module, is communicative CALL phase based (as presented by Warschauer & Healey, 1998) and takes on an open CALL approach (see Bax, 2003), which allows for cognitive theories of discovery/development, and hence the rationale behind the use of a puzzle/game type format for the exercises in the module. This learning model maintains a focus on the 'computer as pedagogue', and contrasts a number of Korean learner expectations and the cultural learning style as presented in the literature and relies upon an active processor "learning-as-knowledge-construction model" (Chun & Plass, 2000, p. 160). In the computer-as-pedagogue model (Higgens, 1986, 1988) the computer "waits until summoned, responds to requests and serves," although knowing the truth (as does the 'behaviouristic magister'), the communicative CALL pedagogue, found within the open CALL approach, patiently provides only requested activities or information so that the student engages in exploration and discovery (Backer, 1995, p. 3). Successful learning, using a cognitive model, depends on the quality of processing that occurs while actively engaging with the subject matter (Atkins, 1993; Duffy & Cunningham, 1996).

Research Focus

This research seeks to understand the interaction between multiple dimensions of computer assisted learning and English foreign language acquisition of Korean freshmen university students. In particular, to examine how the student's knowledge of English words adapted for use in the Korean vernacular – loanwords – is affected by their attitudes towards computerized instruction, their preference for certain methods of learning and teaching, and also by the attributes of computerized instructional packages.

Prior to conducting the research ethical clearance was obtained from the university Human Research Ethics Committee (HREC). Participation in the research was also voluntary, and signed consent was obtained from participants for the use of anonymously collected data for research purposes.

Research Questions

The following research questions were posed:

1. Is student understanding of pseudo-loanwords associated with dispositions towards computer assisted learning of English as a foreign language?

2. Does the application of different computer assisted language learning instructional strategies affect student understanding of pseudo-loanwords?

Summary of Methodology

In order to address the research questions, the study involved distribution and group-administration of a survey to all participants. All participants then took part in learning foreign language from researcher-developed multimedia-based CALL homework modules as part of an experiment. Data concerning the effectiveness of these modules was collected from participants through the administration of a pre-treatment and post-treatment test. The pre- and post-test was based on the learning material that participants were exposed to at treatment.

The research method applied can be defined as a 'within methods' approach (Creswell, 1994). That is, quantitative data collection strategies employing both survey-method and experimental design. This combines the advantages of each research aspect to ensure rigor. The survey method allows for an effective means of asking numerous standardized questions on a given topic, permitting high response reliability, and providing considerable flexibility in constructing aspects of a trait for use in Rasch analysis. Experimental design is a means of gaining insight into a method of instruction, and allows researchers to more precisely control variables and precisely determine individual effects of the variables examined.

A within-methods approach has been selected since, as Borg and Gall (1989, p. 641) iterate, that although powerful, "experiment is not a perfect method" – even well designed experiments are refutable. Therefore, the value of combining approaches in this study are similar to the value of mixed quantitative/qualitative approaches which, Creswell (1994) recognizes, are advantageous in that they can lead to a better understanding of concepts being explored and tested and enhance the reliability of results obtained.

Such experimental research involves manipulation of one or more variables and tests for the effect of this manipulation or treatment on one or more dependent

variable. "It is a powerful method that can provide strong evidence for confirmation of hypothesised cause and effect relationships" (Cavanagh, Kent & Romanoski, 2005, p. 5). The one-group pre-test/post-test experimental design (pre-test, treatment, then post-test) is the same as that of the pre-test/post-test design, but there is no random assignment to multiple conditions, and is thereby considered quasi-experimental. The most common reason for employing a quasi-experimental design is the inability to randomly assign persons to conditions. It is also such design types that are used "when experimental and control groups are such naturally assembled groups as intact classes, which may be similar" (Best & Kahn, 1993, p. 151).

Further, in this research, the Rasch model was employed for data analysis. There are two major reasons for this. First, to identify in the pre- and post-test, items that both top and bottom students get correct. Rasch analysis assists in determining items found not to be discriminating properly, and hence serves to pinpoint data that is of no use, and therefore items that, after trialling, can be identified and improved upon before final instrument deployment. Second, item 'difficulties' can be calibrated to match the range of student 'abilities'. This means that both the test and survey instruments can be confirmed to be a good measure of the trait that each was designed to measure, with person and items plotted along the same single measurement dimension. This is significant as Rasch analysis adheres to unidimensionality, measuring one attribute at a time, and therefore demands a single construct underlie items making up the hierarchical continuum. After ensuring instrument reliability and validity, and refining the data in this manner, a process of multiple regression and the use of ANOVA were employed to test the research hypotheses.

Significance of the Study

The ramifications of this research are three-fold.

First, Field Level Significance: A major contribution of this research is the development and examination of the effectiveness of a unique means of computer-based EFL teaching for Korean students. Researcher-developed CALL homework modules seek to develop a new paradigm for providing base-level instruction to the false-beginner by specifically integrating English language terms inherent within the native vernacular into EFL learning for the purposes of vocabulary acquisition. So

too, at this level, it is noted that reexamination of what constitutes the attributes of a 'Korean learner' needs to occur, and the changing traits and classroom expectations of these students identified so that appropriate language learning materials can be developed for their use.

Second, Practitioner Significance: The study explores the specific impact of the local cultural and learning context as it relates to the application of CALL initiatives. This influences what practitioners can apply and also what limits the effectiveness of CALL materials in Korea. Moreover, light is shed on one of the greatest challenges for teachers and material developers alike: the task of assisting students in becoming more aware of their language use and misuse, and providing instructional content for them that focuses upon building understanding relating to the English equivalents of lexical terminology such as pseudo-loanwords. Significantly, the importance of establishing learner responsibility is determined to be a key factor that ensures multimedia-based learning content proves to be of increasing educational value for Korean EFL students.

Third, Administrator Significance: The integration of computer-based learning and information communication technology (ICT) use within the large majority of mandatory university English programs in Korea is something that is yet to occur. Importantly the demands of a multimedia supported learning environment for use in such contexts are ultimately brought to the fore, along with the need for providing appropriate teacher training in technology use, and administrative support in terms of providing adequate, maintained, and functional hardware and software when the introduction of CALL initiatives at this level begins to occur on a widespread scale.

Organisation of the Thesis

The thesis commenced by outlining the research agenda and putting the study into context by providing a background to, and a rationale for, the research. The core concepts from this background are expanded upon within the literature review (Chapter Two), which looks at the complex relationship between the Korean cultural context and the implementation of educational technology within the nation. This is achieved by grounding the research in EFL and ICT aspects of the Korean educational environment, before highlighting the importance of considering the local cultural context when developing multimedia-based instructional systems. Chapter

Two finalizes by examining existing language learning theory, and establishing the possibility of utilizing CALL to provide learning to Korean EFL students through use of the L1.

Chapter Three examines and details a means by which to test and implement such an approach in the Korean context, by specifying the methods applied throughout the research. The design of the empirical investigation is explained. The target population, sample, instrumentation, and data analysis techniques are explicated and aspects of instrument and treatment reliability and validity are explained.

Chapter Four presents the findings of the research along with the process of refinement and calibration of data by the Rasch rating scale model. The results obtained from final administration of the instruments are presented. Analyses were then applied to test the research hypotheses. These included a regression analysis and one-way analysis of variance.

The implications of the data analysis are presented in Chapter Five, in which the empirical findings are discussed. The association of computer assisted learning of English with the learning of pseudo-loanwords is considered. This evolves into a discussion of issues surrounding the impact of instructional approaches on vocabulary acquisition before the various effective aspects of loanword utilization for foreign language development are taken into account. Also considered in this chapter are the consequences of the changing Korean cultural learning style, the influence of negative washback on the study, and the emergence of a 'stabilized interlanguage' on the Korean peninsula. So too, aspects of reliability and validity are considered, with treatment location and attitudinal effect arising as the largest concerns.

The final chapter of the thesis provides a comprehensive synthesis in conclusion. This is achieved by outlining the specific research contributions the study has made, detailing answers to the research questions, putting the findings into a wider context, and examining the implications of the results. The ultimate significance of the study is discussed, limitations affecting the research are acknowledged, and areas of future research are detailed.

Summary

This chapter presented the thesis of the study and its objectives. The Korean EFL learning context and attributes of Korean EFL learners were also introduced, along with the concept and proposed framework for incorporating first language use in the foreign language acquisition process through a multimedia-based software solution. The research focus was then highlighted before the research questions were introduced, and a synopsis of the methodology employed presented. The significance of the study was also addressed. The chapter concluded with an organizational overview of the thesis.

The following chapter expands on the core concepts so far presented and is a review of the literature pertinent to the study.

CHAPTER TWO
LITERATURE REVIEW

Overview

This chapter highlights the complex relationship between the Korean cultural context and the implementation of educational technology, by looking closely at the local English as a Foreign Language (EFL) environment. This is achieved by providing an outline of the current state of EFL and Information Communication Technology (ICT) in the Korean education system, and by briefly highlighting the means by which Computer Assisted Language Learning (CALL) systems have been applied in the nation's EFL classrooms. The Confucian consciousness is considered, and the possible impact of the local cultural context on CALL is illustrated. An approach that takes into account aspects of the Korean cultural learning style as it relates to the local educational environment, and one that aims to incorporate first language (L1) use to assist in foreign language (Standard American English) vocabulary acquisition, is then envisioned.

Introduction

The need to educate an increasing number of people within Korea in the digital era, has led to both bold reforms and experimentation with advanced technologies (I. Jung, 2000). Recent reforms include the widespread development and integration of ICT, restructuring of the College Scholastic Ability Test (CSAT), focus on student-centred education, and increased English language teaching (Seth, 2002). However, as Park and Oxford (1998) state, Korea is predominantly racially homogenous and primarily monolingual, with a current legal immigrant non-Korean population of 1.1% (Koehler, 2006). Consequently students have little opportunity to use English outside

classrooms, and although technology increases access to English learning contexts, it is not as interactive as students need. Although Jeon and Kim (2001) have pointed out that Korean education is undergoing historic change, and communicative competence is gaining focus in English classrooms, "students have little access to authentic language input and limited opportunities to interact with native speakers" (S. Y. Kim, 2002b, p. 132). Communicative competence, as Hymes (1972) defines it, refers to the ability to use speech appropriately in varying social contexts and seeing competent speakers of a language know what to say, whom to say it to, and how to say it. The constant obstacle for EFL educators is that English is employed as a foreign language and restricted largely to classroom settings. In addition, Korean students approach teachers who are L1 speakers of English through Korean cultural perspectives (Windle, 2003), and remnants of the Confucian consciousness in terms of education and learning culture (see Seth, 2002) still strongly impinge upon learning styles and teaching methods (Gray, 1998; Lim & Griffith, 2003; Min, Kim, & Jung, 2000; Shaffer, 2001). The impact that such perspectives have on the implementation of initiatives such as CALL is important to consider. Considering such cultural paradigms may be instructive as well as proffering ways for the effective use and development of educational technology across a variety of settings, including that of vocabulary development, by taking into account student attitudes toward EFL, instructional methods and how they shape their approach to learning (see Troudi, 2005).

Yet, there has been limited examination of any influence of the Korean cultural learning style on the application of CALL initiatives within the nation. Moreover, the English vocabulary that exists within the native vernacular of Korean EFL students, through borrowing, has largely been ignored as a viable and rich source of linguistic data from which language use and the promotion of foreign language vocabulary

acquisition can be fostered.

This vocabulary consists of direct loanwords, hybrid terms, substitution, and a pseudo-loanword category that includes truncated terminology, false cognates (or false-friends), and fabricated loans. Direct loanwords are those that contain the same denotational meaning in both the original and borrowing language – e.g. *juice*; but at times these words may carry more semantic weight or typically cover more narrow semantic territory – e.g. *burberry* for any *long coat*. Hybrid terms are words formed by a mixture of the original and borrowing languages – e.g. *com-maeng* for *computer illiterate*. Substitution terms are words that are now commonly used in place of the native term in the borrowing language – e.g. *a-reu bai-teu* (from the German *arbeit*) for *part-time job*. Truncated terminology includes words that are shortened from an existing foreign language term – e.g. *remote control* to *remocon*. False cognates are words that generally maintain the original pronunciation, sometimes slightly phonologically altered, but possess a different denotational meaning in the borrowing language – e.g. *cunning* refers to being *deceptive* or *exhibiting ingenuity* in English but to the concept of *cheating on an exam* in Korean. Finally, the fabricated loan terms are those that sound like English words but are not used by L1 speakers of English in the same way – e.g. *open car* for *convertible* in Korean. Also of note, is that many modern loanwords found in Korean originate from Japanese loanwords (Ito, Kang, & Kenstowicz, 2006) that have stemmed from English (such as cunning). It should also be recognized that the meaning behind a number of loanword cognates in Korean can be viewed as convergent, in that they may typically contain only a single meaning, while the term from which the cognates originate are often divergent, in that they may contain multiple meanings (refer to Shim, 1994). (These categories, terms and concepts are discussed in detail under Part D of this chapter: English loanwords in the Korean context).

In recent years several resources have been made available in Korea acknowledging that this linguistic terminology (loanwords) in which the learner is immersed can assist with (Standard American) English language learning and vocabulary acquisition (see Flattery, 2007; Kosofsky, 1995; Shaffer, 1999; Vercoe, 2007). Assisting particularly through 'positive transfer', which is defined as "the facilitating influence of cognate vocabulary or any other similarities between the native and target languages" (Odlin, 1989, p. 26).

It has been emphasized when using loanwords to assist in vocabulary acquisition that students are made aware of loanword cognates that can assist in learning additional similar words (Daulton, 1999; Yoshida, 1978), and since loanwords often undergo phonetic changes when being borrowed, students also need to be made aware of the English pronunciation of the word (Chujo & Nishigaki, 2004). Truncated loanword terminology can be used in the Korean classroom to illustrate the difference between native and target language use by focussing upon expanded forms, and such approaches are considered in Flattery (2007). Examples of these truncated forms are: *a-pa-teu* for *apartment*; *remicon* for *ready-mixed concrete*; and *remocon* for *remote control*. The use of English loans found in the L1, but not commonly heard in the English language can also be introduced, along with more common vocabulary, via recontextualization tasks. (For sources discussing this approach see Flattery, 2007). For example the English terms *various* or *comprehensive* can be taught along with the loanword use of *omnibus*, as this term in both English and Korean refers to *including many things* or *having a variety of purposes or uses* (e.g. *omnibus CD* in Korean for *a CD of various artists* in English). Other borrowed terms, such as *meeting* (for *blind date*), can be introduced in usage context through dialogue (also see citations in Flattery, 2007). Loanword vocabulary has also been taught using associative tasks (see Shaffer, 1999). Examples from

Korean would include: *o-ba-i-teu* (*overeat* meaning *vomit*) used in conjunction with English verbs with the prefix *over* to make new verbs that show an action has been done to too great an extent, such as: *overactive, overcharge, overconfident,* and *overwork*; also *skinship* (an obscure neologism based on the Japanese *sukinshippu*, meaning *close physical contact, usually between mother and child* in English but *close physical contact among people in general* in Korean) used in conjunction with English terms that contain the noun modifier *ship*, to teach terms such as *friendship, partnership, membership,* and *relationship.* Shaffer (1999) also highlights mnemonic techniques for illustrating differences in meaning between borrowed terms in Korean and their English equivalents (false cognates), by having students conceptualize an image of the term and drawing this on the board next to a conceptual drawing of the same term by an instructor who is an L1 speaker of English. This may see the student draw a large luxury apartment complex (or condominium) where many people live while the instructor draws a large house for a single family, after being presented with the vocabulary item *mansion* (an English term borrowed into Japanese, and entering Korean from there).

Techniques, such as those just outlined, could assist learners in acquiring target language denotational and connotational meanings for loanword vocabulary found in the Korean vernacular and variety of English, develop a morphosyntactic understanding of the use of such vocabulary in (Standard American) English, and perceive how this vocabulary is related to other words by rules in the target language. This is important since the borrowed vocabulary, when entering Korean and spoken in the local vernacular and variety, is sometimes abbreviated, and often the original grammar associated with the term is disregarded. As is the case in Japanese, individual terms that were once "prepositions become nouns, nouns become verbs, and conjunctions and suffixes just disappear" (Sheperd, 1996, p.2). Until now, the

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examination of the effectiveness of using such vocabulary in a practical Korean EFL setting has not been assayed.

Part A: EFL in the Korean Education System

The Grade School Sector

Throughout the 1990s education policy changes were significantly historic, especially "… in the area of English teaching, where the decade of the 1990s experienced more changes than the century that had preceded it" (Kwon, 2000, p. 47). During the mid 1990s, the English Program in Korea (EPIK) was introduced into middle schools. It specified that L1 speakers of English provide education alongside Korean co-teachers to enhance instructional competence. Also in 1997, English was introduced as a regular subject within elementary schools. In addition, video and audiocassettes supplemented authorized texts for Third and Fourth grades, while for Fourth and Fifth grades, computer-based CD-ROM materials were made available. This curriculum not only made English language education a compulsory subject for ten years of consecutive schooling (H. J. Lee, 2001), but affirmed the place of Korea in Kachru's Expanding Circle (Kachru, 1998, 2005).

In terms of language education the Seventh National Curriculum was introduced to Elementary and Middle schools in 2001. It was subsequently extended to high schools in 2003 and reaffirmed the need for English instruction at all levels of schooling (see Tables A1 and A2 in Appendix One). This curriculum also gave specific emphasis to communicative competence and fluency through a grammatical-functional syllabus (Kwon, 2000), based upon a rationale concerning the need to understand Western culture.

Elementary and middle school teachers, since March 2001, have been required to teach English by communicating in English (S. Y. Kim, 2002b). Input and interaction are encouraged with English as the primary means by which teachers and students engage in communication. There is also an important difference between the use of classroom English and teaching English through communicating in English. As S. Y. Kim (2002b) reminds us, classroom English is functional and is used for greetings, starting and ending sections of lessons, and general management. Teaching English by communicating in English requires the use of English as often as possible both in and out of class time. Historically, the most frequent problems encountered by teachers trying to implement such an approach centred upon a lack of teacher English language proficiency and a lack of training in the use of Communicative Language Teaching approaches (Li, 1998). These problems have been exacerbated by low student motivation, limited student oral proficiency and in the secondary school setting, large class sizes, lack of teacher preparation time, and pressure to prepare students for the CSAT (S. Y. Kim, 2002a).

The University Sector

During the 1990s "Globalization became one of the most popular words in Korean society" (S. O. Park, 1998, p. 123) and was much discussed, particularly in relation to the learning of foreign languages (Shin, 2003). The impact of globalization on Korean education led to increased importance being placed on the learning of Standard American English (Kwon, 2000). Consequently, the employment of L1 speakers of English was advanced as the main means to provide EFL education in the tertiary education sector. H. J. Lee (2001, ¶. 11) commented: "Educational administrators as well as our students are often misdirected to believe that native speakers are … their only resource for improving their English

proficiency."

Ahn (2002) also draws our attention to the fact that in general university English classes, learners have low motivation. Further, it was noted that textbooks were lacking, and this "combined with a delivery of instruction largely devoid of learner involvement has led to a situation in which College English is largely viewed with criticism" (Ahn, 2002, pp. 196-197). Additionally Pak (1999) comments that it is not easy to find any first language culture within college level English language teaching texts, as most of these textbooks are generally imported (H. J. Lee, 2001). Currently, though, there is a singles series of EFL textbooks published in Korea that aim to impart English linguistic knowledge through the extensive use of Korean culture along with limited L1 use (Finch & Hyun, 2000). It is proposed that such material needs incorporating within university English classes taught by L1 speakers of English and/or the homework process. The material would stimulate Korean EFL student engagement with English language activities through the specific and controlled use of their first language as well as using the cultural familiarity of the learner.

Nevertheless, and regardless of textbook employed, a number of universities have come to require certain pass grades on standardized English language tests. Along with this, a number of universities require proficiency in computer literacy before undergraduate students are granted graduate status. English language skills and more recently ICT skills are viewed as essential within the Korean educational environment.

ICT use for Language Learning in Schools and Universities

In Korea since the early 1990s, "the introduction of cutting-edge information and communication technologies has come to be seen as a barometer of national competitiveness and quality of life, and is being specifically pursued as part of a national development strategy" (Ministry of Information and Communication, in I. Jung, 2000, p. 2). Korea today, in terms of ICT use, has one of the most advanced educational strategies in Asia (UNESCO, 2002).

Computer education classes for at least an hour per week became mandatory in 2001 for Grades One and Two, and in 2003, mandatory for Grades Three to Six. This was in addition to use of computers for more general instructional purposes – most students already were exposed to three to four hours each week. The importance of computer-based instruction has been further strengthened by another mandate that requires that at least 10% of class time should involve computer use (Korean Education and Research Information Service [KERIS], 2001).

Notwithstanding the high priority assigned to computer use in Korean grade schools, such extensive use has been criticized. For example, M. Lee (2001) asserted that it can reduce the attention given other educational needs and may eventually adversely impact on the intellectual development of children. Similarly, the educational psychologist Jane Healy (cited in Cuban, 2001, p. 60) stated that prior to the age of seven, spending time with computers "not only subtracts from important developmental tasks but may also entrench bad learning habits, leading to poor motivation and even symptoms of learning disability."

With regard to ICT instruction replacing previously used video and audio

instructional technologies, H. Chun (2002) highlighted the need to question how useful and effective these CALL-based methods were in comparison to earlier technologies. Chun's concerns are particularly important since in Korea, eventually, "30 percent of the regular [grade school] curriculum will be conducted employing multimedia instructional and learning methods" (MEHRD, 2002, p.147).

Yet, in contrast to the grade school setting where computer-based initiatives are being used to assist learning, government reforms for the development of ICT utilization within higher education focus firmly on administrative use, infrastructure development, and the promotion of research (KERIS, 2001). This implies a lack of focus on the development of e-learning initiatives in the Korean tertiary education sector compared with other nations, such as China and Japan. Tertiary education providers globally have been increasing online instruction of traditionally taught courses over the last decade (Elgort, Marshall, & Mitchell, 2003; Palloff & Pratt, 2001). Even though cyber-class systems exist in Korea, there is minimal CALL use within university EFL classes. Systems generally lack the e-learning capacity of more advanced software and are designed largely for classroom management support and administrative duties. These systems are predominantly web-based, with most L1 English speaking faculty members locked out due to lack of administrative support or problems in dealing with the Korean language interface. Subsequently, there is currently no complete alignment among universities regarding CALL with the ICT instructional initiatives set in place at the grade school level. Further, "textbooks are preferred in university-level curriculums" and "in spite of the availability and accessibility of computers and the internet today, the integration of web technology into the curriculums of Korean universities has not found widespread acceptance" (Min, et al, 2000, p. 120). Multimedia and ICT use within university classes, especially for English language learning taught by L1 English

speaking instructors is, therefore, minimal or non-existent.

Alternatively, the Korea National Open University (KNOU) has extensively utilized ICT as a means to deliver instruction. KNOU has also joined with eight traditional universities to form the Korea Virtual University Consortium and is collaborating with these universities to design web-based courses. A number of traditional universities also offer credit and non-credit web-based courses, and the fourteen college consortium currently forming the Open Cyber University (OCU) operate web-based courses for students of member schools. Today "seventeen cyber universities are fully accredited by the Ministry of Education of Korea with some 30,000 students" (I. S. Kim, 2005, p. 117). However, as Eastmond (2000) states:

> Asia has more enrolments in open and distance education than anywhere else in the world … Using the United Kingdom's Open University (UKOU) completion rate of 49% as a baseline, completion rates in Asia are much lower: 28% at Indira Gandhi National Open University (OU), 17% at Sukhotai Thammathirat, and only 10% at the Korean National OU (p. 103).

Eastmond (2000) then cautions that attempts to import courses from other nations have failed when transplanted to Asian learning contexts, predominantly due to the local cultural and learning environment. Ellis (1994) has also highlighted problems associated with the transfer of Western teaching styles to Asia, particularly those relating to English language teaching. Oka (2004) and Weschler (1997) have questioned the applicability and appropriateness of universal English language teaching assumptions and approaches when viewed in relation to the Asian context. Critchley (1998) provided support for this notion by noting that most language learning theories and theories of language are developed in contexts where English is taught as a second language, and have largely been transplanted without

modification into the Asian EFL context.

Considering such views, aspects of the cultural learning style and Confucian consciousness of Korean EFL students may hold important implications for the application of ICT and the design of CALL systems for effective use with these learners. The term Confucian consciousness has been adopted to encompass the traditional patterns of social behaviour, especially those involving learner interaction, based on recent interpretations of East Asian cultural traits (as presented in Cortazzi, 1990; Finch, 2000; Hofstede, 1986; Hyun, 2001; and, Joo 1997). The term has also been extended to include the learning culture unique to Korea (see Seth, 2001), particularly as it relates to its conceptualization of proper teaching methods, lesson design, learner expectations, and classroom management (outlined in Finch, 2000; Gray, 1998; Lim & Griffith, 2003; Min, Kim & Jung, 2000; Park & Oxford, 1998; Robertson, 2002a, 2002b, 2003; Shaffer, 2001; Windle, 2003). It is therefore suggested that any design or use of such CALL systems needs to take into account both cultural and learning factors. As O'Hagan (1999), Healey (1999) and Warschauer (1996) suggested, CALL effectiveness relies on instructional design methodologies and implementation techniques and does not result from use of the medium itself. As such, CALL needs to be made more congruent with Korean EFL student levels and expectations, and the local cultural learning context, and address the learning style and 'hidden assumptions' associated with the Confucian consciousness. CALL initiatives in the Korean educational landscape could then, and as Ahn (2002) and I. O. Kim (2000) predict, be more directed to assist in transitioning students from roles of dependent and passive learners to more active and autonomous learners.

CALL Software and Courseware in Grade School and University Settings

Although ICT is highly developed and widespread in Korea today, the implementation of multimedia use within the Korean education system has in the past suffered from a number of deficiencies. These include a lack of available software for education, lack of training for teachers in the use of computer equipment, and lack of planning for the use of existing media facilities such as VCRs and televisions (KERIS, 2001).

Furthermore, to date, much research on the use of CALL and the application of computer-based learning within Korean EFL classes has centred on the use of Computer Mediated Communication (CMC) as well as the internet for in-class instruction. Limited research exists concerning the impact of software packages and courseware. This can be explained by the fact that in-class use of CMC and internet-based activities are more attractive, and cost much less than EFL software packages and courseware, and require less time consuming and less expensive development. As Min, et al (2000) highlight, "costs of the packages and the installation of them on the main server is too high for Korean university level institutions, where English is a requisite course for thousands of students" (p. 124).

Nonetheless, a vast number of domestically and internationally produced CD-ROM based commercial software packages currently exist and are readily available to both Korean EFL students and their teachers. However, "many creative commercial software packages may not be effectively used in classes if they're not restructured before their use" (Pusack & Otto in Min, et al, 2000, p. 120). Also commercial packages effective in one setting may fail in another (Pankuch, 1998). Indeed, reorganization, using PowerPoint, of CD-ROM English language learning material for use with Third and Fourth grade level students, has been utilized "to

reduce the instructor's burden of administering a class entirely in English" (J. Kang, 2002, p. 295).

Today, educators also have access to a number of programs for multimedia creation and media editing from which they can produce and develop materials for students to study outside of class. With this in mind, Yang (2002) recognized that songs can provide children with motivation, spur their interest, and assist them in remembering linguistic information with ease. As a result the notation program, *Finale 2002* has been applied in middle school EFL classes "to help children learn the rhythm and lyrics of a song in accordance to their level" (Yang, 2002, p. 299). This is an effective use of multimedia to assist Korean "stress deaf" (Kenstowicz, 2005, p.13) students, whose L1 is syllable timed, to develop familiarity and mastery of stress-timed English. Such a task can be very daunting (Bell in Thompson & Gaddes, 2005) as Korean syllables are of approximately the same duration and do not exhibit alternations in degree of stress (de Jong, 1994; Jun, 1996; Lim 2001), while in English stressed syllables are significantly longer than unstressed ones with most vowels in unstressed syllables reducing to a schwa (Bolinger, 1965), with the rhythm of English "characterized by alternations in degree of stress" (Trofimovich & Baker, 2006, p. 11). The value of audio with middle school children studying English was also recognized by S. G. Hong (2002), who suggested several methods through the use of *Cool Edit* for sound file creation, and *Cdex 120* for the conversion of audio. Files are then integrated into PowerPoint to teach elements of popular music to provide lyrics along with the audio and generating interactive exercises for in-class use. I. S. Im (2002) also emphasized the use of flash cards, and picture and sound dictionaries, for use with middle school students for vocabulary learning, and has adapted use of the *Quia puzzle maker* for this function. In addition, C. H. Lee (2000) stressed the use of information gaps and primarily simulations, as a means to

provide EFL students with language practice. He referred to programs such as *Storyboard* and the use of authoring tools as a means for educators to construct learner material.

Yet C. H. Lee (2000) warns that although teacher-created CALL software allows learners to gain control over the learning environment, teachers still need to remind Korean students to participate actively in the educational process. It was also determined that Korean "elementary school students were passive when directing their language learning" (Y. S. Jung, 2000, p. 43).

Even so, Korean academics conducting studies into the use of courseware within the secondary school system found that students in experimental groups utilizing software were able to achieve higher scores, indicating better proficiency, than students on national standardized listening tests. These students also gained confidence in listening to and speaking with L1 speakers of English (Choi, Kim, Lee, & Sol, 1999). So too, when utilizing multimedia courseware collaboratively with children, Y. S. Jung (2000) found that interaction features believed to foster language learning were 25% higher in the experimental group than the control group. Significant differences in listening comprehension and attitude also emerged when students were placed in friend and non-friend groups and expected to use the software. However, the type of group formation did not appear to lead to any significant differences in oral proficiency development and in vocabulary learning. Both friend and non-friend groups performed similarly in this regard.

Additionally, H. J. Lee (2001) highlighted a study conducted by Park and Kim concerning English language education at the grade school level that puts forth a compelling finding. Achievement test scores from students taught by Korean teachers with the assistance of multimedia devices were similar to scores of students taught by L1 speakers of English, with both scores higher than those obtained by

team taught students. No further studies of this type within Korea were readily available in the literature. This would prove an interesting area for further research, especially since the Korean perception is "... native-English speaking teachers are much valued to preserve the authenticity of the foreign language in the classroom" (H. J. Lee, 2001, ¶. 2).

In fact, it is the teacher who is crucial to the instructional use of multimedia within classroom environments (Cunningham, 2000; Y. S. Jung, 2001), "... both the preparation and the knowledge of teachers about technology, as well as how to integrate and refine the lesson with technology, were the key to whether it was effective or not" (Stepp-Greany, 2002, p. 170). However, in Korea, there are very few studies that have focused on the use of training in technology, and "little research has been conducted to address teachers' beliefs and their effect on technology oriented language instruction" (Y. S. Jung, 2001, pp. 143-144). W. K. Choi (2002, p. 236) also noted that although CALL is gaining widespread acceptance "it is not yet well conceptualized in the minds of learners as an effective teaching and learning tool particularly in teaching and learning environments of Korea." Like teacher studies, research examining learner responses as well as their degree of satisfaction with CALL material is only recently available and limited in scope to CMC or web-based instruction (see H. K. Choi, 2004; Hwang, 2002; C. J. Kwon, 2004; O, 2005; Oh, 2003a, 2003b).

Notwithstanding, CD-ROM based multimedia content for grade school classroom use has been officially deployed with integration of Computer Assisted Instruction (CAI) alongside the textbooks published by the Ministry of Education, and put into nation-wide practice through the Seventh Elementary English curricula in 2001. The National Curriculum requires use of these textbooks. Consequently, items of English language education including the "… number of new words,

grammatical patterns, language functions, [and] cultural items" are dictated. English language skills are largely taught in lower grades with a focus on speaking while higher grades focus on reading and writing (M. Lee, 2001).

The multimedia CD-ROMs used in conjunction with grade school textbooks for English language learning provide four kinds of instructional models. These are: presentation, tutorial, simulation, and edutainment/courseware (Pang, 2002, p. 285). As a result of examining the practical use of these materials, Choi and Shin (2002) report that: (a) more detailed teacher guidebooks will lead to more effective use of the system; (b) that teachers need to develop innovative methods to encourage active use of the CD-ROM rather than passive watching of the media; and (c) teachers need to manipulate the programs in conjunction with other English curriculum material. They additionally called for more teaching modules to be introduced within the system. The Korean government also recognized that the quality and quantity of educational content is not completely satisfactory, and that effort should be put into this as well as in construction of a multimedia service system to support every subject available within school curriculums (KERIS, 2001, p. 8).

To a very limited extent, CD-ROM resources have also been used within university EFL classrooms. In this case Keem (2000) found, by examining levels of student achievement at course end, students conducting self-study with multimedia as well as engaging in multimedia instruction within the classroom were able to outperform students who engaged in the self-study of multimedia materials alone. W. K. Choi (2002) also found that Korean university students with higher grades were more responsive to CAI, and therefore able to gain benefits from such instruction, while those with lower grades preferred traditional classroom lectures to CALL. Moreover, it has been shown that individual variables such as gender, computer ownership and computer ability impact on the effectiveness of university level

English reading classes conducted with technology (H. S. Kang, 2000). Additionally, Lee and Kastner (1999) stated that although CAI activities eventually lead to a sense of empowerment and independence, and students became more accountable for their own learning, they are in fact "very challenging for most [Korean university] students because they perceive themselves as dependent language learners and expect to be told what to do and how to do it" (Lee & Kastner, 1999, p. 29).

Korean teachers traditionally provide learners with teacher-centred classrooms, adopting a method of one-way instruction over two-way interaction (Jeon & Hahn, 2006). Significantly Ahn (2002) considered that the use of CAI can provide Korean instructors of English at the college level a way to provide a student-centred classroom. Such student-centred classrooms would allow students to engage in autonomous, independent, and interactive learning while providing motivation and language skills development. While I. O. Kim (2000, p. 39) stressed that "Korean students have been accustomed to lecture-oriented rote learning," use of CAI and multimedia-based materials can accommodate various learning styles simultaneously, and that optimal results can be achieved by the use of multimedia, specifically with communicative activities, targeting specific language skills.

There is unfortunately a significant lack of research available on the development of Korean university student EFL skills through the use of technology. As Lee and Yang (2002) noted, there are indeed "very few cases of using CALL in regular [university] English programs." Korean researchers who have focused on the use of CALL within university English programs include C. I. Lee (2000), as well as Lee and Pyo (2002), and they revealed that the impact of educational computer use within these programs have to date largely generated less than satisfactory results.

The CALL initiatives for university students that currently exist typically consist of resource lists for student access outside of class time. These provide

limited activities for individual study and language practice. Yet, there are some other initiatives. For example, Lee and Yang (2002) refer to the homepage project of the Foreign Language Education Centre (FLEC) of Paichai University. Similarly, Lee and Pyo (2002) highlighted the use of web-based instruction within English language courses at Woosong University and the development of a program to study the effectiveness of both on- and off-line delivery of instruction. In this study, significant differences were found between scores from online and offline students, and that "the performance of the offline classes is significantly higher than that of the online ones in a consistent manner" (Lee & Pyo, 2002, p. 77). Lee and Yang (2002) indicated that such results stem from a student lack of minimum levels of functional English and learner independence. This also highlights the importance of ICT teacher training to redress these deficiencies and a particular need for establishing a meaningful learning environment when employing CAI and multimedia-based CALL in the cultural context of Korea. Even today, it is noted that "… online systems are not being used properly in an integrated and standardized form within the regular university curriculum" (Hoh, 2005, p. 341), and there is a continued call to "… focus on the need to promote and develop multimedia-assisted teaching methods in university education" (C. J. Kwon, 2005, p. 169).

Part C: Cultural Influences on Computer Assisted Learning of English as a Foreign Language

CALL initiatives in the Korean educational environment have been employed to greater or lesser extent, and with varying degrees of success. Yet, one important aspect appears to have been consistently underemphasized: the impact of the local cultural context and learning environment on the development and implementation of CALL. This is a particularly critical concern as cultural contexts and coping with

cultural differences in the learning process of students and the impact of this on teaching and learning styles in Korea could be significant. As a result, this research will examine issues surrounding the local cultural context, including the disposition of students towards CAI, the Korean learning style, and EFL learning styles, as well as seek to develop and assess a focused approach to CALL that involves L1 usage in the Korean context.

The Confucian Consciousness in Korea

Soper (1997) has observed that, students who come from teaching backgrounds of a traditional nature believe "a teacher should dictate knowledge to them" (p. 18). Similarly Min, et al (2000) illustrated that Korean students strongly agree with the attitude that the teacher is responsible for the learning of students. Importantly, these factors hold implications for the implementation of CALL within Confucian-based societies like Korea. As Hofstede (cited in Joo, 1997) states, the Confucian mindset sees the role of the teacher as 'an authoritative figure', where "effectiveness of learning is related to the excellence of the teacher," and so "students expect teachers to have [and provide] all of the answers" (Learning Styles, ¶. 2). So too, Eastmond (2000) notes that in many Asian countries, the teacher is a '*sensei*' "who imparts knowledge and wisdom, and the role of the student is to listen carefully, learn deeply, and apply that wisdom" (p. 104).

Within Korea, Park and Oxford (1998) illustrate that language learning is perceived by students as teacher-centred, and most "EFL teachers in Korea remain the primary source of action and linguistic input – the main 'actors' in the classroom" (p. 107). Such a 'teacher as expert' paradigm relies on transfer rather than the creation of knowledge, and sees students regard themselves as dependent learners who engage in individualistic memorization and rote learning rather than as

participants in the collectivist creation of knowledge that leads to learning. Yet, Kubota (2001) has noted that different pedagogies are at play in the EFL classrooms of Japan, and that individualism and independence can take on different meanings in different cultural contexts (Fujita & Sano, 1988) allowing for "multiple meanings of cultural constructs such as individualism, independence, and creativity (Kubota, 2001, p. 30). In the Korean context Rhee, Uleman, and Lee (in Windle, 2003, p.7) also remind us that the "individualism-collectivism construct is not so straightforward." Still, the Confucian tradition encourages master/apprentice relationships and a culture of learning that "promotes teacher dependency for passive students, a tradition hard to reverse" (Eastmond, 2000, p. 104). As such, in Korea, the 'empty-vessel' argument of teaching and learning has been, and still is, predominant, and "in many respects English-teaching and language learning methods in Korea have not yet caught up with the times. Centuries-old methods of dealing with both teaching and learning languages are still closely adhered to" (Shaffer, 2001, p. 1).

The Korean Cultural Learning Style

Antecedent research shows that "each culture has its own distinctive value systems and orientations which illuminate what is of significance within that society" (Hyun, 2001, p. 205). In Korea today, Confucianism thrives more than in any other Asian nation including China and Japan (Crowder Han, 1995), and pervades everyday Korean life (Hyun, 2001; Koh, 1996). Breen also notes that Koreans have adopted "… Chinese Confucianism in a more extreme application than the Chinese themselves" (Breen, 1999, p. 12) and have outdone their elder brother "China, in its application of Confucianism" (Breen, 1999, p. 43). These precepts generate a cultural learning style that strongly influence the means of acquiring knowledge, and

as Joyce and Weil (1986) highlight, a people's culture strongly influences their personalities and ways of communication. According to Hyun (2001), it is also vital to realize that an individual's values can vary greatly within a culture, and it is essential to see people as both individuals as well as a cultural group (Kalaboukas, 1997, cited in Armitage, 2001).

Nonetheless, the cultural notions that Korean EFL students maintain do affect their classroom behaviour, educational development, and use of English language skills, as well as guide their interaction with L1 speakers of English (see Armitage, 2001; Breen, 1999; Cronin, 1995; Gray, 1998; Lim & Griffith, 2003; Min, Kim, & Jung, 2000; Robertson, 2002a, 2002b, 2003; Shaffer, 2001; Windle, 2003). Such behaviour may also impact upon the use of CALL, both in self-access and collaborative modes, and would result from the means by which students expect to acquire knowledge, and as such this needs to be considered in the design and application of such material. Scant research exists regarding these notions, with few researchers alluding to such issues (for example C. H. Lee, 2000; Y. J. Lee, 2000; Pankuch, 1998). Considering the local cultural and learning context may then allow even greater promise for the effectiveness of CALL initiatives in Korea. Accordingly, further explanation of the cultural background and Confucian mindset is warranted.

The Confucian consciousness, examined by Cortazzi (1990), is responsible for many of the 'hidden assumptions' concerning teaching methods, lesson content, and learner expectations that students, particularly Koreans, exhibit within classrooms. Finch (2000) listed Korean classroom expectations and this is reproduced in Table 1.

Finch (2000) also refers to Hofstede (1986), as does Hyun (2001) and Joo (1997), who focus on cultural differences in learner/teacher interactions throughout the world. Hofstede, reporting on the Confucian consciousness, sees problematic situations between teacher and student arising from: differences in social position;

differing student perceptions of curriculum relevance between two societies; profiles of cognitive abilities; and, expected patterns of interaction. Among fifty countries Hofstede (1986) placed on a 1 to 100 point scale, Korea ranked: 18 for individualism, denoting a 'collectivist' society; 61 for large power-distance in social positions; 85 for strong uncertainty avoidance; and 40 denoting Korea as a 'feminine' class society.

Table 1

Korean classroom expectations

	Japan (Korea)	USA
Culture	Homogenous	Heterogeneous
	Hierarchical	Egalitarian
	Group harmony	Individuality
	Consensus	Independence
	Group dependence	Self-confidence
	Avoid confrontation	Confrontation acceptable
	Emphasize empathy and non-verbal elements	Stress verbal communication
Education	Repetition, memory, persistence	Understanding
	Respect authority	Develop critical ideas
	Exams are crucial	Exams less important
	Fear of failure	Less fear of failure
	Accept group consensus	Debate ideas
Language	Complex scripts	One simple script
	Strong word orientation	Meaning orientation
	Prefer hints, ambiguity, indirect	Prefer explicitness, straightforward
	Listener interprets	Speaker makes clear
	Use of intuition	Verbal clarity
	Avoid disagreement	Disagreement acceptable
	Avoid direct questions	Many direct questions
	Distrust speech	Speech shows confidence
	Prefer formal, regulated	Prefer informal, spontaneous
	Reluctance for verbal intimacy	Willingness for verbal intimacy
Content of Communication	Develop interpersonal attitudes	Debate ideas
Mode of Communication	Use intuition	Use logical arguments
Aim of Communication	Attain social harmony	Reach valid conclusions

The interaction characteristics of Koreans, based on Hofstede by Finch (2000) are

reproduced in Table 2.1 and Table 2.2.

Table 2.1

Interaction characteristics of Koreans: collectivist and large power-

distance profiles

Collectivist	Large Power-Distance
Positive association in society with whatever is rooted in tradition.	Stress on personal 'wisdom' which is transferred in the relationship with a particular teacher.
The young should learn; adults cannot be students.	The teacher merits the respect of his/her students.
Students expect to learn how to do.	Teacher-centred education.
Individual students speak in class only when called upon by the teacher.	Students expect the teacher to initiate communication.
Individuals only speak in small groups.	Students expect the teacher to outline paths to follow.
Large classes split socially into smaller cohesive groups.	Students speak in class only when invited by the teacher.
Formal harmony in learning situations should be maintained at all times.	The teacher is never contradicted nor publicly criticized.
Neither the teacher nor the students should have to lose face.	Effectiveness of learning related to excellence of teacher.
Education is a way of gaining prestige and of joining a higher status group.	Respect for teachers is also shown outside of class.
Diploma certificates are important and are displayed on walls.	In teacher/student conflicts, parents are expected to side with the teacher.
Certificates (however obtained) are more important than competence.	Older teachers are more respected than younger teachers.
Teachers are expected to give preferential treatment to some students.	

Table 2.2

Interaction characteristics of Koreans: strong uncertainty avoidance and

feminine society profiles

Strong Uncertainty Avoidance	Feminine Society
Students feel comfortable in structured learning situations; precise objectives, detailed assignments, strict timetables.	Teachers avoid openly praising students.
Teachers are expected to have all the answers.	Teachers use average students as the norm.
A good teacher uses academic language.	System rewards students' social adaptation
Students are rewarded for accuracy in solving problems.	A student's failure in school is a relatively minor accident.
Teachers (and students) are allowed to behave emotionally.	Students admire friendliness in teachers
Teachers interpret intellectual disagreement as personal disloyalty.	Students practice mutual solidarity.
Teachers consider themselves experts who cannot learn anything from lay parents – and parents agree.	Students try to behave modestly.
	Corporal punishment is rejected.*
	Students choose academic subjects in view of intrinsic interest.
	Students may choose traditionally feminine academic subjects.

* In Korea the physical punishment of grade school students is more highly tolerated than in other nations, like Australia, where it is discouraged. Kim, Kim, Park, Zhang, Lu, and Li (2000) show rates of 62% for corporal punishment administered by teachers in grades four through six at two schools in the Seoul and Kimpo areas of Korea, and in comparison to another Confucian-based culture 51.1% at two schools in Shanghai and Yanji in mainland China.

While these tables represent the typical schema found in the literature, they also polarize the Asian (Korean) versus Western (American) teaching and learning contexts into dichotomous differences (see Kubota, 2001). It is important to note that the view presented is not intended to define one as superior, but to illustrate the common perception perpetuated by the literature. Recently this dichotomy has been criticised (see Holliday, 1999; Littlewood, 1999; Pennycook, 1994, 1996), and aspects of each side of the dichotomy have been observed in various contexts within the Asian and Western educational spheres, "raising the question of whether educational practices in the United States are distinct from those in Asia" (Kubota, 2001, p. 23). Yet, it is recognized that cultural differences do exist, and that each cultural group has a set of certain shared views and social practices that can impact upon the educational process and influence approaches to learning (see Atkinson, 1999; Littlewood, 1999). As such, the tables can inform us of the impact of Confucianism, as an imported dynamic, upon Korean EFL learners, and can serve as a base from which to extend study of the Korean educational context. In addition, although much research linking the Confucian consciousness and Korean classroom interactions has been undertaken (refer to Gray, 1998; Lim & Griffith, 2003; Robertson, 2002a, 2002b, 2003; Shaffer, 2001; Windle, 2003), there is still limited research detailing specifically how such notions of interaction in the Korean EFL classroom come to affect the use of media and computer systems for learning.

Although Y. J. Lee (2000) does indicate that rather than being forums of communication and discussion, English Educational TV programs tend to be language lessons, and such programs "are merely promoting the Korean identity as in the dependent second language [learner] mode," and laments "the content and presentation clearly portray the audience as helpless and dependent learners" (pp. 107-108).

EFL and the Korean Cultural Learning Style

"Though some Korean students may express complete disinterest in Confucianism, they still remain bound by its approach to disciplinary habits of work and study, life and play" (Korean Overseas Information Service, 1993, cited in Cronin, 1995, ¶. 9). Cronin (1995), from her teaching of Korean students, discovered that learners would respond to certain class activities with statements like: the professor is the expert; we have never before been given a choice. Breen (1999) also states that questioning, even at university, is viewed as an insult and challenge to the teacher. This kind of student outlook may also impact upon the L1 English speaking instructor, by leading to cultural misunderstandings and interaction problems in the classroom (see Kolarik, 2004; Lim & Griffith, 2003; Robertson, 2003), combating efforts to implement a learner-centred approach to education (O'Donnell, 2006).

Teacher-student interaction studies by Armitage (2001) and by Choi (cited in Armitage), examined Korean EFL students living and studying abroad, and the difficulties experienced in relationships with lecturers/tutors and peer students during class discussions. Although the Korean students in the study recognized their lack of competence in spoken English, they also perceived Australian students as selfish, talking without recognizing the needs of others nor allowing them an opportunity to speak. They also viewed lecturers/tutors as unable to manage classes to allow all students an equal voice. Further, Lee (cited in Armitage, 2001) highlighted the Korean lack of confidence in communicative English in university English classes taught by L1 speakers of English, and determined that such lack of confidence stems from an inordinate focus on reading and writing as well as the limited opportunities Korean students have to speak English. Lee (in Armitage, 2001) also mentions that differences arising from the teacher-student relationship may affect the development of student confidence when speaking in English with L1 speakers of English.

Additionally, as Windle (2003) points out, after surveying 104 university English students, Confucian traditions - such as allowing men to speak before women in a group - no longer influence classroom behaviour. However, Korean EFL learners perceive classroom environments of L1 English speaking teachers to be different from that of Koreans. If given a choice, half of those surveyed would not speak to a foreign teacher; students are culture-bound and interpret actions of foreign teachers in terms of Korean cultural perspectives; and learners tend not to use specific English expressions since the Korean equivalents would be impolite (Windle, 2003). This last point implies that the native language produces an affective cultural barrier over the foreign language linguistic use of Korean EFL students, at least initially by dictating what is contextually appropriate or inappropriate (see Troudi, 2005), stemming from Confucian consciousness, and in this case relating to politeness strategies.

Armitage (2001) further indicates, for those Koreans studying abroad, that Koreans disregard other cultures and their teachers' experiences. It is unclear how this relates to the reaction of Korean EFL students to the in-country L1 English speaking teacher. For Koreans this behaviour may relate to Confucian consciousness, as such a construct in Korea demands splits in society to form groups that are generally at superior or subordinate levels. Such constructs also extend to the definition of self and others – Koreans view themselves as one group and others collectively as those who are non-Korean (Breen, 1999; Kosofsky, 1990). In relation to this rigidly ethnocentric identification and demarcation, Y. J. Lee (2000, p. 100) noted that within Korea there is both conscious and unconscious avoidance of the use of a foreign language "which in turn inhibits not only oneself but others from practicing the language," and that:

There still remains a kind of cultural resistance to accepting English as

a language for meaningful communication among the Korean public …

although there is a clear and compelling need to learn English, it is for

use outside [with others/non-Koreans], not inside Korean circles [with

self/Koreans].

This has led to citizens, and aspects such as national pride, blocking government

plans to adopt (Standard American) English as a secondary official language within

Korea (Ok, 2005), and sees Korean EFL students "remain in a state of social

ineptness as second language users … being dependent learners and lacking a social

identity as a second language user of English" (Y. J. Lee, 2000, p. 103). Further, as S.

A. Kim (2000) pointed out, the goals of helping Korean EFL students understand the

target (American) culture, broaden their horizons, gain a better understanding of

Korean culture, improve their skills in (Standard American) English, and reduce

ethnocentric attitudes toward the learners own culture, "has almost been ignored by

our language teachers" (p. 152).

It should also be mentioned that the 'collectivist' nature of Korean society

illustrated by the Hofstede (1986) study, along with group-centredness identified by

Armitage (2001), would not by its very nature be at variance with a collaborative use

of multimedia activities and CMC if culturally attuned and adapted to the Korean

EFL classroom (I. O. Kim, 2000). Yet, regardless of the group-oriented nature of

Koreans, findings from contemporary research show that Korean students have

difficulty gaining the full benefit from group activities (Armitage, 2001), and prefer

structure and formality to group-based learning (C. C. Park, 2002). Armitage

explained these findings in relation to the educational system where students mostly

concentrate on memorization. How the impact of such traits affects learning with

CALL initiatives, and use of collaborative CMC and network-based group tasks

within the EFL classroom, has not been a focus of Korean-based EFL research. This is perhaps because, as I. O. Kim (2000, p. 39) states, "collaborative learning is predicated on a culture that values collectivism."

CALL and the Korean Cultural Learning Style

Following a global trend (see Son, 2004) there is much emphasis today on the use in Korea of collaborative CMC and CALL activities that focus on autonomous learning (S. Y. Kim, 2002a; Oh, 2003a). However, this may conflict with students' strong beliefs that the teacher is ultimately responsible for their learning. In addition, social customs, including respect for the teacher and the existence of senior-junior status levels amongst all members of Korean society sees relationships and responsibilities formed between those of different status, gender and age. Little research has been done on the way these customs might impact CMC, particularly in the L1 English speaker EFL classroom.

However, reduction of teacher-student talk, and an increase in student-student interaction, could see learners (in the terminology of Hofstede, 1986) engage in interaction with peers of relatively equal social power, as well as low social distance. In this regard student-student interaction can be undertaken through collaborative-based CMC and network-based activities. Yet, perceived gender differentials stemming from a Confucian mindset may impact upon this form of classroom interaction, as may the cultural traits of *noonchi* (reading another's mind, and using tact accordingly), *chemyon* (maintaining social face), and *uri* ('our', or rather the collectivist 'us' – and the importance of group identification) (see Breen, 1999; Cronin, 1995; and, Kosofsky, 1990). As such, any interaction between students and computers needs to be structured to reflect what is representative of Korean classroom expectations. These are believed to be: group dependence, allowing

students to work towards consensus, and avoiding disagreements to obtain social harmony (Finch, 2000). Still, elements of intragroup interaction leading to differential performance among students may yet appear, resulting from the cultural bonds that guide relationships. I. O. Kim (2000) asserts that most English as a foreign language students live in monolingual/monocultural environments and are culture-bound, as their entire world view is determined by values gained through a single cultural environment.

In this regard, the 'self-access approach' (Gardner & Miller, 1999) of computer-based activities might yet have a place in the Korean EFL cultural learning environment. That is not to say that there is a need for complete reliance on such systems, but such materials, particularly if applied in the homework setting during the learning stage of language acquisition, can allow for the perception of the 'teacher as expert' paradigm to be transferred to computer-based applications (Spencer, 1999). This is one method of employing CALL that takes into account a Confucianist approach, and embodies elements of the Korean cultural learning style. The computer can then fulfil the role of a mentor-based system for students (Crook, 1994), affording them the direction and guidance they need when learning, and if associated activities are designed appropriately, can be extended to allow learners to negotiate meaning from activities, in sociocultural terms, from a Zone of Proximal Development (see Vygotsky, 1978). In this manner students can also become exposed to the nature of autonomous, independent, and interactive learning, and be led away from the more teacher dependent means of acquiring knowledge (Ahn, 2002; I. O. Kim, 2000).

Independent language learning in CAI can offer a 'self-contained learning environment' (Dickinson, 1987) in which students become active rather than passive recipients of information (Klassen, Detaramani, Lui, Patri & Wu, 1998). This may

assist in developing levels of learner independence and the functional English skills that Lee and Pyo (2002) indicate that Korean students require when undertaking CALL activities focusing on autonomous learning. This is significant as we know from Ahn (2002) that it is the individual who must ultimately take the most important role in the development of his or her own language skills in such educational contexts. Further, use of self-access materials may also ensure delivery of the same content to students in mandatory study programs, such as the university English setting.

In addition, self-access approaches to computer-based activities, while rigorously providing for student needs and purposes (Conacher & Royall, 1998; Levy, 1997), also allow for autonomous context-based learner-centred and learner-controlled study at a time and pace convenient for the student. Such an approach can diminish the cultural bonds of perceived social status and required interactions resulting from these bonds (see Min, 1998). One example of this includes the cultural factor of 'saving face', and in this regard Song (cited in Min, 1998) refers to saving face as 'perfectionism'. That is, where 'perfectionism' refers to the tendency to save face by not making mistakes in public, and avoiding situations that might lead to making such mistakes. It is further envisioned that the outward display of 'perfectionism' by Koreans in public settings such as classrooms would also come into play within group interaction within class time, as well as one-to-one or collaborative CMC, seeing students working to lessen 'fear of failure' by not as actively engaging in learning – particularly "in a society in which saving face is vital to self-esteem" (Niederhauser, 1997, p. 9), and where "it might be said that most Korean students are what Krashen (1981, p. 15) calls *monitor over-users* who do not like to take any risk to protect their face" (J. T. Chang, 2003). However, with a sensitive and culturally attuned approach to the use of CALL, befitting the local

cultural and educational context, it is suggested that such factors can be alleviated through the use of self-access multimedia programs in the homework learning phase, followed by, or combined with, appropriately applied classroom CMC in the practice phase. This is in addition to traditionally taught course methods and approaches. Such a context would not only lower affective filters (Krashen, 1985), but work completed individually in the computer environment is essentially a private matter. Any errors are usually known only to the learner (J. T. Chang, 2003). This would provide students with a zone of comfort in which to make mistakes as they explore learning in an environment where 'fear of failure' can be minimized, and where errors can (in terms of a social constructivist paradigm) provide a scaffolding of knowledge that allows students to autonomously and independently learn from their mistakes (see D. Chun, 1994; Erstad, 1996: Malhorta, 2002), and then, in turn, afford them the opportunity to actively apply this knowledge in practice.

Part D: English Loanwords in the Korean Context

Background: Second Language Acquisition and the Native Language

In the field of EFL, from a teaching rather than purely linguistic analysis perspective focusing on form, research on the applicability of loan terminology and the native language for assisting the foreign language acquisition process of students has been highlighted (refer to Canagarajah, 1999; Danhua, 1995; Nation, 1990, 2001, 2003; Weschler, 1997). Yet only a small coterie of scholars have investigated the applicability of loanword terminology for vocabulary development in the Japanese and Korean EFL context (see Daulton, 1998, 1999a, 1999b, 2003; Kimura, 1989; Nation & Newton, 1997; Shaffer, 1999; Shepherd, 1996; Simon-Maeda, 1997;

Yamaguchi, 2002; Yoshida, 1978). Such an approach views the first language

loanword bank as a useful store of knowledge that can promote aspects of positive

transfer, lighten the burden of learning throughout the process of foreign language

acquisition, and provide scaffolding. The approach can also establish a building

block for foreign language acquisition by using the native language as a resource and

a means of reference for adjusting to the target language (Standard American

English). As Oka (2004) highlights, foreign language users are multi-competent

language users rather than deficient native speakers: "language teaching can tap into

a mind that already contains an L1; that is to say, the new language is learned on the

basis of the previous language" (Oka, 2004, p. 6).

Nation (1990, 2003) recognised the value of using the student L1 in the foreign

language classroom, both by the L1 speaker of English and L2 (second language)

English speaking EFL instructor, citing studies by Lado, Baldwin, and Lobo (1967);

Mishima (1967); Laufer and Shmueli (1997) that compared the effectiveness of

vocabulary acquisition, showing that L1 translation is the most effective method and

that focal points of learning emerge particularly when loanwords, and the basewords

from which they stem, differ significantly enough to confuse learners. Nation (2003)

further states that arguments against L1 use can equally be applied to the use of

demonstration, realia, and pictures, and that it would be foolish arbitrarily excluding

the foreign language learners' proven means of communication. It may be more

difficult for L1 speakers of English to bring aspects of their students' L1 into the EFL

classroom, compared to the L2 English speaking EFL instructor, but in either case, a

balanced approach, as Wigglesworth (2002) agrees, is required to ensure that the L1

is not overused.

To date, the general pedagogical approach (see Yoon, 2004) assumes that

Korean EFL students will need to relearn the context of loanwords when applying

them in crosslinguistic discourse, relearning the 'English' that they already know in order to correctly understand and use these terms when undertaking discourse with L1 speakers of English. English language teaching texts have predominantly left this process up to the student, or the teacher who has time to provide exercises in class when there is room for it in the syllabus.

Daulton (1998, 1999a, 1999b, 2003), Nation & Newton (1997), Shaffer (1999) and Yamaguchi (2002) suggest the bridge of commonality between English and the native language in the form of loanwords, as a pre-existing lexical resource, should not be ignored throughout the language learning process. This argument views loanwords as means from which to develop a 'common vocabulary core', which can be used as a base or a starting point for target language vocabulary development. If utilized effectively it is hypothesized that the English vocabulary acquisition progress of students can be advanced through the specific inclusion of loan terminology in EFL teaching materials tailored specifically for use in the Korean context, as it has in other settings (refer to Brown, 1995; Brown & Williams, 1985; Daulton, 1998; Kimura, 1989; and, Yoshida, 1978). These materials not only take into account the local cultural context and learning environment, but allow for both incidental and intentionally directed vocabulary acquisition to occur. These materials can also be most easily incorporated within existing EFL syllabuses, particularly those of mandatory English language based courses at university level, in the form of homework or self-access CALL-based materials as part of the learning phase of language acquisition, while the classroom use of language focuses upon establishing and providing learners with all forms of language practice through a range of approaches.

What is important to recognize initially is that the setting of foreign language acquisition is markedly different to that of initial language acquisition, as usually by

the time a person desires to function in a foreign language, or has to for university graduation requirements or other needs, the mind has adapted to a prescribed method of gathering and storing knowledge. The problem of foreign language acquisition is essentially worked upon by the mind's governing culturally adopted knowledge gathering process. "A person who knows a language has acquired a system of rules and principles – a 'generative grammar', in technical terms – that associates sound and meaning in some specific fashion" (Chomsky in Peck, 1992, p. 140). In this view, there are two things required to learn a language: principles (universal to all languages); and parameters (which are language specific). The learning of a first language sets these parameters in one fashion, while the learning of other languages becomes a process of appropriately adjusting the values of these parameters (Isobe, 2007). However, the dominant means of explaining the adaptation of loanwords in a number of languages, and in the analysis of English loanwords in Korean (Y. Y. Cho, 2001), is what Ito and Mester (1995b, 1999) propose as the 'core-periphery model'. In this model the native vocabulary exists as a lexical 'core', and satisfies all possible markedness constraints, while loanwords enter the L1 at the outer 'periphery' where fewer constraints are obeyed, and over time gradually move inwards towards the core as they become nativized. This is in line with Chomsky (1986, p. 190): "The language that we then know is a system of principles with parameters fixed, along with a periphery of marked exceptions." This notion of 'periphery' contrasts 'prohibited segments', "... segments that are systematically and immediately adapted or eliminated as soon as they are introduced in a language," with that of 'tolerated segments', "... segments which are sometimes adapted and sometimes not" (Paradis & Lebel, 1994, pp. 75-76). As such, "... the periphery, like the core, results from parameter-settings. In the periphery however, parameters are set in such a way that they often yield constraint deactivation" (Paradis & Lebel,

1994, pp. 75-76), as Chomsky (1986) noted, peripheral constructions relate to the core in systematic ways by relaxing certain core grammar conditions. Yet the periphery should not possess constraints that are not also present in the core:

> The core/periphery distinction suggests that we should not expect to find a language where a constraint holds in the foreign loanwords but not in the native vocabulary, or a situation where the stronger version of a constraint holds in the periphery and the weaker version in the core. What the core-periphery condition entails, then, is a notion of distance from the lexical core: As the distance increases, constraints are weakened and abolished, and the range of admissible structures increases (Ito & Mester, in Paradis & Lebel, 1994, p. 76).

Such aspects of loanword investigation lead to a primary concern with the phonological and syntactical nature of adopted terms. Shedding light on the means of how such transformations occur provides knowledge that can be applied to determine potential learner errors, or areas of interference, in EFL instruction (see Spolsky, 1989; Wardhaugh, 1970). This knowledge can also be used to determine what aspects of transfer can be identified as positive, and used as a base starting point for target language vocabulary development, by lightening the burden of learning through scaffolding, and by promoting incidental and directed vocabulary acquisition to enlarge receptive vocabulary recognition (see Daulton, 1998, 1999a, 1999b, 2003; Kimura, 1989; Nation, 1990, 2003; Nation & Newton, 1997; Nicholls, 2002; Shaffer, 1999; Shepherd, 1996; Simon-Maeda, 1997). In other words, by seeking to construct a 'common vocabulary core', determine what aspects of loanword terminology can prove useful in the target language acquisition process from within the Korean EFL context.

The parametic view, as illustrated by Koda (1997), provides plausible explanation for crosslinguistic variation in L1 acquisition that shows sentence comprehension and production as heavily constrained by the linguistic properties specific to each language. Also in the linguistic processing of different languages qualitatively different mechanisms are involved, and "L1-based skills and strategies are transferred at various L2 processing levels" (Koda, 1997, p.38). Recent research also highlights that "orientation generated by L1 linguistic features not only influences L2 acquisition … but also constrains the cognitive procedures used in L2 processing" (Koda, 1997, p.38). This would see aspects of both metalinguistic and linguistic knowledge, as well as the corresponding processing procedures, transfer from the L1 to foreign language production and comprehension in both written and oral forms.

Additionally, Nation (1990) asserted that L1 and foreign language vocabulary are stored together in a state that encourages both borrowing and (positive) interference. Also, that the more a teacher can draw similarities between first and foreign language vocabulary the greater the opportunity for positive transfer. Alternatively, Ellis (1997) refered to interference as 'transfer', and as the influence learners exert over the acquisition of the foreign language. This is governed by perceptions about what is transferable depending upon the stage of foreign language development of the learner. Selinker (1971), Seliger (1998) and Ellis (1997) also commented upon interlanguage, where learners construct interim rules to guide their foreign language use based upon the native language when they perceive it will assist in the learning task, or when they have become sufficiently proficient in the target language for transfer to be possible. Ellis (1992, p. 48) also highlights, stemming from Vigil and Oller (1976), that fossilized "structures can be realized as errors or as correct target language forms." Ellis (1997) later raises an important

distinction between learner 'errors' and 'mistakes' – mistakes reflect a lapse in performance while errors reflect knowledge gaps. This concept originated with Corder (1967), and prior to his work, interference was seen as inhibitory, but he pointed out that it can be facilitative and provide information about one's learning strategies.

Carroll (1964), Albert & Obler (1978), and Larson-Freeman and Long (1991) concluded that foreign language learning is partly learned in terms of the kinds of meanings already learned in the first language. For example, connotations behind the word *fighting* in Korean and English differ, with the former used to encourage a person or cheer on a team and the latter referring to a dispute or argument, and this can affect foreign language acquisition. "In learning a second language, L1 responses are grafted onto L2 responses, and both are made to a common set of meaning responses," i.e. L2 expressions come to bear traces of the L1 (Bhela, 1999, p. 23).

Nicholls (2002) emphasized that learners look for similarities between languages, and although interference can prove a hindrance, reliance on similarities between the native and target language exists, and through positive transfer, can assist the learner, and as Kimura (1989) suggested, thus provides enhanced possibilities for EFL vocabulary acquisition. In one regard, as Daulton (1998) noted, recognition and recall of lexical items with loanword cognates is better than for those without. Nation (2001, p. 48) also mentions that "for some languages, the presence of loanwords makes learning much easier." For example, the learning burden of making form-meaning connections is light when the word is a cognate or a loanword shared between the native and target languages. That is, the strength of connections between form and meaning determine the ease for the learner in retrieval of meaning, when seeing or hearing the word form or when retrieving the word form when wanting to express meaning.

However, as Selinker (1992) pointed out, reliance on the first language may result in a fossilization of an interlanguage. It can also be argued that without adequate knowledge of the use and misuse of loan terms and the development of a specific approach tailored to the local EFL learner, there is much danger of this 'fossilization' occurring naturally. This is due to learners being unaware of their language misuse (Shaffer, 1999; Sheperd, 1996; Simon-Maeda, 1997) and teachers focusing on the syllabus that needs to be taught instead of adequately addressing the issue. This may have already occurred in the Japanese and Korean contexts (see J. S. Kim, 2006). Further, in the case of local varieties of English, taking one example of institutionalized fossilization (Nickel, 1998), "…undifferentiated tag questions by Indian English speakers is not [considered to be, like it once would have been,] a reflex of incomplete acquisition or fossilized interlanguage, but a manifestation of a steady-state cultural grammar of English in outer-circle contexts" (Bhatt, 2001, p. 537). So too, English loanwords used in Korean follow Korean morphosyntactic rules and have culture-specific meanings. It is these culture-specific meanings that are then brought into the target language classroom by Korean EFL learners.

The use and misuse of the loanword lexicon (see Shaffer, 1999; Sheperd, 1996; and, Simon-Maeda, 1997) among Korean EFL learners, when speaking in the target language (Standard American English), is a form of fossilization (see Quirk, 1990; and, Selinker, 1992), keeping in mind that fossilization results from stabilization, and that stabilization does not "imply a permanent cessation of learning" (Odlin, Alonso, & Alonso-Vasquez, 2006, p. 97). Nakuma (1998) states:

Fossilization is a performance-level phenomenon occasioned by the L2

learner's conclusion that a given L2 form need not be acquired because

it is already available to the target L2 system from his or her pre-

acquired language system(s) through transfer. Fossilization, then, is

engendered necessarily by the interlingual identification of an L2 form

with an L1 form by the L2 learner. Fossilization implies that the L2

learner has, at an early stage of the target L2 learning process, made the

decision not to 'reacquire' the specific L2 form which will be perceived

subsequently by others as fossilized. Furthermore, interlingually

identified forms can be either positive (meaning that the pre-existing

form perfectly overlaps the target L2 form with which it is identified,

such that there is no perceptible deviation from the native L2 norm

when the L1 form is performed out as a substitute), or negative

(meaning that the two forms do not overlap perfectly and a deviation

from the L2 native norm is perceptible when the L1 form is performed

out as a substitute) (Nakuma, 1998, p. 252).

In this sense fossilized forms are not the product of acquisition, but of

avoidance and of no functional necessity for a particular aspect to develop further. It

is these kinds of fossilized or 'stabilized' forms that continue to persist unless there is

focused direction against the reasons behind the interlingual identification sustaining

them. One tool, according to Tarone (2006), that may help in countering such forces

of fossilization is language play, as either play with language form or play with

semantic meaning, will stretch the learner system "beyond the limits of its current

norm" (Tarone, 2006, pp. 162-164, 168). However, as Koda (1997) stressed, when

learners mistakenly assume they know a word, particularly when reading, they tend

to ignore various contextual clues highlighting the semantic incongruity resulting

from the misidentification of the term. As such, this contributes to a failure to 'notice', and "learners must notice the difference between their own and new language forms in order to acquire the new form, then failure to notice means failure to acquire – and failure to acquire, over the long haul, means fossilization" (Schmidt, 1993, in Tarone, 2006, p. 160). Noticing is "a necessary and sufficient condition for converting input to intake" (Han, 2004b, p. 130). So, "error detection depends not just on psycholinguistic factors, like availability of attention, but also on factors of social context such as the 'accuracy demand of the situation' and 'various listener-based discourse constraints'" (Kormos, 1999, in Tarone, 2006, p. 160). At a more global level, socio-psychological factors can also prevent foreign language learners from "identifying with certain interlocutors and adopting new linguistic norms used by those interlocutors. Learners in this situation may resist linguistic change, preferring their own stable IL norms" (Tarone, 2006, p. 160).

Further, as Nicholls (2002) states, since the mother-tongue influences English learning, there will be as many varieties of 'Learner English' or 'World Englishes' as there are mother tongues. Tran (1997) and others (Crystal, 2003; Jenkins, 2003; Kachru, 2005; McArthur, 2003) have also identified that three key elements comprise the World Englishes perspective: (a) a 'repertoire' of English models exist; (b) localized innovations in English have a pragmatic base; and (c) English is viewed as belonging to all who use it. The constructs through which English is taught in the EFL environment needs to improve learner understanding of both the language they are learning and the "key philosophical differences between the worldview in which they were socialized and the one in which they must now operate" when using the target language (P. Lee, 1997). Utilizing loanwords as a lexical base for teaching false-beginners semantic/conceptual differences between the native and target language can then be provided through systemic attention (cf. Contrastive Analysis

Hypothesis). While Norrish (1997) not only highlighted a better language development setting derives from assigning an equal value to both the local and target language, but called for English language teaching to take into account the manner that English forms a part of the local language. It is also important for learners, particularly from Expanding Circle countries like Korea, to move their understanding and use of their local English 'variety' to one more appropriate when speaking 'standard' English or EIL (English as an International Language). In this regard, Jenkins (2000) drew attention to 'mutual unintelligibility', while Tran (1997) highlighted situations where Vietnamese workers were not able to understand Taiwanese or Korean bosses who were using their own varieties of English as standard in the international context. These issues, as they relate to EFL concerns, as Kachru and Nelson (in Tran, 1997) indicate and as Bhatt (2001) also highlights, need to be undertaken through studies relating to variation, pragmatics of variation, varieties and cultures, and varieties and creativity. This view of English as a Lingua Franca (ELF) or English as an international language, as Brown (in Tran, 1997) sees it, has begun to affect language education policy decisions in External Circle contexts particularly regarding the choice of pedagogical models, standardized testing and examination standards, and development of material for listening and reading. These approaches ideally also need to include crosscultural and crosslinguistic elements that can provide learners with bicultural and bilingual competence, since varieties of English are used in diverse sociolinguistic contexts. Further, Bhatt (2001) highlighted that pedagogical paradigms, including methods, models, and materials, have not revealed any sensitivity to local sociolinguistic contexts in regard to the use of local varieties of English. If developed, they would prove to be a step toward contextually sensitive pedagogy that is socially realistic as foreign language acquisition occurs in normative rather than native contexts.

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Context: Loanwords in the Native Vernacular and Educational Applicability

Studies of loanword usage within the Korean language have been undertaken. However, in the past, these studies have predominantly focused on the processes involved in adaption (Hirano, 1994; Kang, 1996; P. H. Lee; 1995; Lee, Lee, Park & Kang, 1999; Oh, 1996), have largely been concerned with showing that Koreans transliterate loans (Yu, 1980), that these loans normally come to conform to Korean phonological patterns (Colhoun & Kim, 1976), and that when there is conflict between the syllable structure of English terms and Korean words, native Korean speakers intuitively reject the term or change it to conform with Korean syllable structure conditions (Nam & Southard, 1994). This serves to retain as much phonetic information from the source as possible while conforming to constraints of the recipient language. In this regard, Steraide (2001) has argued for the existence of a phonological module that assists in determining the minimal modification required to fit foreign lexical items to the phonotactics of the native language. In addition it has been shown that a move from reliance on Chinese character words to English loanwords has occurred in the modern Korean vernacular (Shim, 1994), with Standard American English as the source of most recent Korean loans (Kenstowicz, 2005).

In general, linguistic-based research on loanwords has come to focus upon the phonological process. That is, input from the donor language (e.g. English) and output in the native language (e.g. Korean), centring on rules and constraints and more recently perception. Optimality Theory (OT) (Prince & Smolensky, 1993), views auditory salience and similarity as the most critical factors in resolving the choice as to which aspects of the source term should be preserved or sacrificed (refer to Kang, 2003). In OT, the grammar of a language is defined by 'a hierarchy of

universal constraints' – Structural (Markedness) that reflects unmarked forms as defined by Universal Grammar (UG); and Faithfulness for preserving input properties (Shinohara, 2001). As such, the language acquisition process in OT consists of determining the ranking of universal constraints as well as inputs. In this regard, OT has its heritage in the principles and parameters framework.

> In generative grammar, one task of the learner is to determine which of the possible grammars allowed by an innate Universal Grammar is compatible with the language she is learning. In a Principles and Parameters (P&P) framework, this task amounts to determining the correct settings of a number of usually binary innate *parameters*, while in an Optimality-Theoretic (OT) framework, the task amounts to determining the correct relative rankings of a number of innate *constraints* (Dekkers, van der Leeuw & van der Weijer, 2000, p. 25).

OT allows researchers to examine the extent of difference between adapted forms and how the adapted forms not only differ from the native system but also conform to it. "Within the optimality perspective, it is reasonable to assume that the [pronunciation] difference between loanwords is due to the employment of different constraint sets and rankings between the source language and the borrowing language" (H. Yoo, 1996, p.147). While Cloutier (2005) believes that in Korean, different constraint rankings "... have a different rank order depending on the group to which the word belongs" (native terms, Sino-Korean terms, and terms borrowed from other languages), and as such B. R. Lee (2001) argues that two levels of loanwords exist, those adapted and those nativized. However once adaptation through specific loanword constraint ranking is complete, "outputs are stored in the Korean lexicon in the same pool as that for the native vocabulary", and when "used in Korean morpho-phonology in combination with other native words and the

loanwords from different source languages, they will be evaluated by ... Korean

phonotactic and phonological constraints with no discriminations as to their origin"

B. R. Lee (2001, p. 102). This leads to a situation where " the English word

'application' is used as [$^{\varepsilon}$ph^{i}lik^{h}eiš$^{\circ}$n] when adopted as a loanword, but the same

word may be mispronounced [$^{\varepsilon}mn$ik^{h}eiš$^{\circ}$n] when considered as pure English" (B. R.

Lee, 2001, p.118). Kenstowicz (2005) also shows that Korean readily accepts the

phonetic and grammatical faces of a lexical item, with speakers having a robust

intuition on the 'proper' means of adopting a word, and a number of researchers have

uncovered generalizations that illustrate the complexity of this process (refer to Ahn,

1998; Y. J. Kang, 2003; and, Oh, 1996).

Perceived similarity (Kenstowicz, 2001; Steraide, 2001) seeks to determine if

loanword adaptations are grammar-driven or if other factors such as perception also

have a role to play in the process. However, it is recognized that a perception-only

approach (Peperkamp & Dupoux, 2003) is too strong (Smith, 2006), and that the

native language phonology also influences perception. "Diverse forces influence

loanword phonology – including not only perceptual effects, but also orthographic

information, and even interactions between loanword adaptation and other

phonological constraints active in L$_b$ [borrowing language]" (Smith, 2006, p. 11).

Nonetheless, and highlighting that linguists view loanword adaptations as part of

native phonology and treat them as equals with other phonological factors within the

borrowing language, Peperkamp and Dupoux (2003) argue that the perceptual

process is more sensitive to the phonetic properties of language rather than the

phonological. They argue that loanword adaptations take place during perception

through a process of phonetic decoding, "which maps non-native sound patterns onto

the phonetically closest ones" (p. 369) where closest is viewed as "... either acoustic

proximity or proximity in the sense of fine-grained articulatory gestures ... Phonetic

decoding, then, acts as a filter, in that many fine-grained acoustic details of speech sounds are lost as these sounds are mapped onto phonetic changes" (p. 368). Peperkamp and Dupoux (2003) also suggested that our processing systems seem tuned to our native language, distorting the way we produce, memorise, and perceive foreign sounds – 'phonological deafness' – even in bilinguals. The role of perception can be "well summarized by the P-map (i.e. Perceptual map) hypothesis" (H. Y. Park, 2007, p. 2), where "a sound in the source language is adapted into the recipient language in a way that maximizes the similarity between the two sounds ... but without violating the phonotactics of the recipient language" (Shinohara, 2001, p.2). Peperkamp (2004) also illustrated that for Korean, from a phonological analysis, there are rules and constraints that refer to loanwords only but due to their nature "...a phonological account would require a special loanword module in order to accommodate the loanword adaptations" (Peperkamp, 2004, p. 5). As such, it is argued:

> If the borrowing process was purely phonological and the borrowers
> had complete access to the phonology of both languages, varied
> adaptions of a single sound would not be expected. Varied patterns in
> loanword adaptation such as those being shown in Korean loanwords
> from English are difficult to explain without considering perceptual
> factors in the borrowing process (H. Y. Park, 2007, p.3).

Silverman (1992) also suggests that the native system plays a central role in perception, in which a perceptual level filters out sounds that cannot be assimilated natively with an operational level then adapting the resulting input based on structural constraints. Silverman considers the division of levels to be the same in both the bilingual and monolingual speaker, contradicting aspects of speech perception research (Flege, 1995). It has also been noted that when massive scale

borrowing occurs, aspects of phonology from the donor language can be imparted onto the native system, resulting in mini-phonologies (Lees, 1961; McCawley, 1968). Although there is debate as to the extent to which this challenges the single grammar notion (Ito & Mester, 1995a), recent research (Shinohara, 2001) highlighted that it is rational to attribute loanword adaptations within the native language to the latent use of Universal Grammar.

Jacobs and Gussenhoven (2000) claim that a 'universal phonological grammar' exists, where humans can perceive all sounds from any language without mistake, and therefore perception plays no role in adaptation. This is in contrast to the view of Peperkamp and Dupoux (2003) as outlined above, and other research that shows infants lose their ability to discriminate speech sounds in foreign languages (Werker & Tees, 1984). Yet, it has been well recognized that loanword adaptation is carried out through a 'phonological grammar' (Smith, 2006; Yip, 2002). That is, for the speakers who first borrow a word through contact with a source language the underlying representation of the loanword in the borrowing language closely resembles the source language form. The borrowing language's phonological grammar then maps the underlying representation to a surface representation, and as part of mapping the loanword may be altered to satisfy the phonological requirements of the borrowing language. However, Smith (2006) notes that it is significant that languages such as Korean use feature change or deletion repairs in the native phonology, but loanword adaptation involves epenthesis. Kang (1996) also recognizes this, illustrating that Korean loanword phonology and Korean native vocabulary have separate constraint systems within OT. This implies that "nonloan phonology cannot be the only mechanism accountable for loanword adaptation – if it were, then the same repair strategy that is used for the nonloans would be chosen for loanwords as well" (Smith, 2006, p. 3-4). As a result, "researchers have proposed

adding loanword-specific principles or constraints to the phonological system" (Smith, 2006, p. 4), as loanwords enter one language (with a set of constraints) from another language (with another set of constraints) (Yip, 1993).

"As UG or principles and parameters theory provides a framework for testing hypotheses about L2 acquisition" (Rodby & Winterowd, 2004, p. 5), OT provides a basis for understanding the entrenchment of loanwords in a matrix language. In interlanguage terms this is a system that produces 'errors' as well as 'correct forms' (Rodby & Winterowd, 2004). It is these 'errors' or 'correct' forms that are perceived as L1 (negative) transfer or L1 (positive) transfer when Korean loanwords are used in the target language, and this extends from semantic use through to the phonological and phonetic forms (Jenkins, 2000). As Gass and Selinker (1994, in Han, 2004b) remind us: it is from the teacher (or researcher) perspective that a learner generates errors, and "for corrective feedback to be potentially useful, it is necessary that some sort of attention-getting mechanism be built in the feedback process to enable the learner to perceive it for what it is, and further, to recognize the gap between the feedback and his or her own output" (Han, 2004b, p.150). Otherwise, "if the learner fails to discern the real difference between the information available in the correction and his or her error, fossilization is likely to result" (Han, 2004b, p. 150). With this in mind, the study of foreign word adaptations can not only probe the final-state grammar of L2 but may also shed light on the initial state (Shinohara, 2001). The implication for acquisition is that the UG latent in L1 is accessible in a later stage in life. So, the rise of constraint-based frameworks such as OT have come to provide insight into native phonology by revealing relative ranking of faithfulness constraints that would otherwise remain 'hidden' (see Jacobs & Gussenhoven, 2003). Harely (1993) also makes claims that crosslingual analysis can help undo fossilized errors.

Predominantly, all of this research, focusing largely upon form, highlighted a lack of research centring upon the practical applicability of loanwords in the EFL environment. As Rodby & Winterowd (2004) emphasize, much SLA (Second Language Acquisition) research focuses on how the conditions for language are enacted rather than on the influence of social usage conditions, and the cognitive processes of the learner. In this regard, "scholarly work on input processing (VanPatten, 1996) and focus on form (Long & Robinson, 1998) suggests that acquisition benefits most when second language learners focus, not on linguistic form alone, or on communicative meaning alone, but on both form and meaning when they use the L2" (Tarone, 2006, p. 159). As such, it is essential to examine the usage aspect of loanwords, if seeking to utilize such terms in the foreign language acquisition process, in terms of both social usage and applicability for learning, for it is important to understand how the loanwords operate in the L1 and what influence they may in turn have upon foreign language communication. Particularly since learners who share the same L1 share the same conceptual framework, and "have highly homogeneous ways of conceptualizing and verbalizing their life experiences" (Han, 2004b, p. 156). In addition:

> Borrowing is a very complicated process involving perceptual, non-perceptual, phonological, and morphological factors, as well as non-linguistic factors (e.g. historical reason, influence of orthography, frequency effect; thus it is difficult to give a unified explanation for all the loanwords even within one language (H. Y. Park, 2007, p. 25).

"Loanwords are words from one language which are incorporated into another, the borrowing language" (Haunz, 2003, p. 1). In this process, the borrowed terms are usually adapted to fit the governing sound system of the acquiring language. At times, these words are not only phonologically altered but the semantic meaning can be

changed. In this case, pseudo-loanwords can result. Such borrowings and adaptations in Korean have also resulted in adjustments to the grammatical structure, such as increased use of –*tul*, an optional plural particle that is almost an equivalent of the plural inflection –*s* in English, and the adoption in the 19th Century, not followed by Chinese and Japanese, of writing each Korean word unit separately (McArthur, 1992). The English loan and pseudo-loanwords that exist in Korea, or were borrowed into the language, largely become propagated through the media and the use of technology (Doms, 2004). Newspapers pepper these terms throughout news stories and titles, as do television advertisements and programming, along with internet sites and chat rooms coming to aid in the continuous spread, use, and entrenchment of these terms within the native vernacular ("Plagued by Mangled English, South Korea Struggles to Improve Skills," 2000).

English loanwords entering the Korean language can fit into one of six categories as presented in Table 3 (based on Miller, 2003), and Figure 1 illustrates these graphically as a linguistic subset of the language. A summary of the assimilation of loanwords into Korean, based on Taylor and Taylor (1995), can be categorized as: (a) the majority of recent loanwords appear to stem from the English language, and to a lesser degree other European languages; (b) shortening, limiting, combining, and extending English loanwords results in words that can be incomprehensible to an L1 speaker of English; (c) some loanwords tend only to be used as compound words; (d) loanwords tend to be nouns in the original language, but are incorporated into Korean for use in any form; (e) loanwords are blended with other loans or the native language to coin new terms or pseudo-loanwords and false cognates; and, (f) brand names take on semantic meaning.

Table 3

English Loanwords in Korean by Category

Category		Definition	Example Korean Term
Direct Loanwords		Loans with identical, or phonetically modified pronunciation/meaning	*Chocolate*, *Orchestra*, *K'op'i* (coffee); *Juseu* (juice)
Hybrid Terms		Loan terms incorporating words from both English and Korean	*Binyl-Bongteu* a 'plastic bag (lit. vinyl-envelope); *bangul-tomato* a 'cherry tomato' (lit. 'bell tomato')
Substitution		Loanwords that have come to replace other loans or existing Korean terminology	*Lighter* replacing *pul* (lit. fire); *Parking* replacing the Sino-Korean *Ju-Cha* (lit. 'stop car')
Pseudo-Loanwords	Truncated Terminology	Loanwords formed from the shortening of English terms	*Remocon* (REMOte CONtrol); *Remicon* (REady-MIxed CONcrete
	False Cognates	Terms that are pronounced the same, but hold different semantic meanings in English and Korean	*Consent*, 'permission' in English, a 'power outlet' in Korean; *Steam*, 'water vapour' in English, a 'radiator heater' in Korean
	Fabricated Loans	Terms that sound like English, but are not used by L1 speakers of English	*Dutch pay*, meaning 'go Dutch'; *hop* or *hof* (used interchangeably) meaning 'bar'; *wheel cap*, meaning 'hub cap'
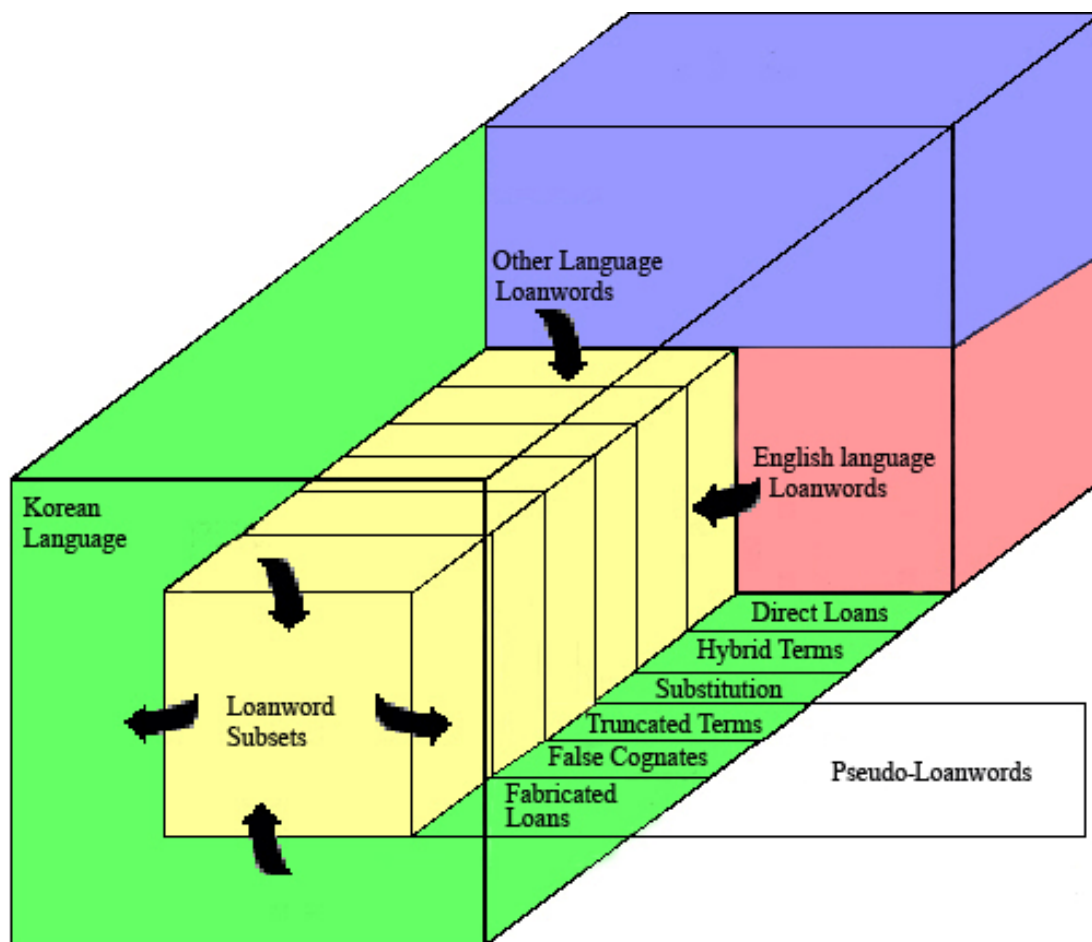
Figure 1: Loanword Categories Graphically Represented as a

Linguistic Subset of Korean Language

Considering their appropriateness for the EFL teaching context, English

loanwords in Korean can fall into one of three categories: (a) forms that are not

utilized in English, such as *remicon* meaning *ready mixed concrete*. For these terms a

background of sociocultural knowledge may be required of L1 speakers of English

before they can guess the meaning of the word; (b) forms that can be expressed or

understood. These include words such as *omnibus*, meaning *a collection of several

items*. These terms can also consist of pseudo-loanwords that have their basis in the

English language. Many of these particular words may not be commonly heard in the

'English' speech community, or are not used in the manner expressed in Korean – e.g.

fighting meaning *a struggle* in English but a word used to encourage a friend or cheer on a team in Korean; (c) forms that are identical in English and Korean (e.g. *burger*, *chocolate*, *computer*, *lighter*, *orchestra*). Such terms as these pose no, or limited, problems for interpretation and can be used directly within contextual English language settings as no decoding on the part of the learner is required for the terms in this category and at the beginning phases of second language acquisition. The terms in this category also form a basis for using situational settings that are contextual with existing language knowledge but also form a part of the target language. This can allow for settings that provide for loanword use in the EFL context, incorporated into lesson material, and reflective of 'real-life' contextual environments and topics to promote realistic English language use that is of relevance to student learning. Loanword terms from each of these categories can also provide a means for students to identify and compare crosscultural and crosslanguage use, granting them a more complete understanding of their own natural language use while developing English competence, allowing them to see how certain topics reflect and imply regularities between the seemingly alien native and target languages. Keeping in mind that "loanwords result, not from stupid straightforward copying: rather they result from phonological and semantic transformations that are complex and creative" (Tanaka, 1997, p. 2), and this is well established (see P. Y. H. Choi, 2001; Dimova, 2007; Peperkamp & Dupoux, 2003).

The problem for constructing an appropriate foreign language framework that utilizes loanwords from the L1 and testing the effectiveness of it is that the communicative competence provided by these loanwords must be used to promote aspects of positive transfer (Daulton, 1998; Kimura, 1989; Nicholls, 2002), lighten the burden of learning (Nation, 1990, 2003), and provide scaffolding (see Daulton, 1998, 1999a, 1999b, 2003; Kimura, 1989; Nation & Newton, 1997; Shaffer, 1999;

Shepherd, 1996; Simon-Maeda, 1997) in order to develop communicative

performance in the target language (Standard American English). A further problem,

that must be considered, is that the underlying phonological and grammatical

competence possessed by knowledge of the loanword from the L1 may affect the

learning of the underlying models and rules of performance in the target language

(Standard American English). These issues should be expected and need to be dealt

with in the development of an approach that incorporates loanwords for use in the

teaching of EFL in the Korean context, as well as in the construction of linguistic

exercises relevant for imparting English language knowledge through the use of such

terms. Such a model of instruction, through use of loanwords, would however hold at

its core utilization of aspects of linguistic competence already in possession of the

student's concerned (Daulton, 1998, 1999a, 1999b, 2003).

Pedagogy: Target Language Lexical Development through L1 Usage

Vocabulary acquisition is a gradual and complicated process – a process where

there are three dimensions of knowledge that can be acquired to various degrees (see

Henrickson, 1999).

The first dimension views word knowledge as a continuum rather than as

either known or unknown, with learners possessing word knowledge that ranges

from zero through to partial and onto precise. Korean EFL students knowledge of

English loanwords from their L1 lexicon sees many of these words, such as direct

loanwords, fall on this continuum at a precise level. That is, students possess

comprehensive understanding of the foreign language (Standard American English)

term since it has been fully assimilated into Korean usage. However, some other

loanword terminology (e.g. pseudo-loanwords and hybrid terms) possess very

different semantic and pragmatic meaning from the original language from which it

was borrowed, when used in the student L1, and in terms of English as a foreign language usage, would come to fall on the word knowledge continuum at a partial or even zero point level.

The second dimension refers to word knowledge types and views depth of knowledge as requiring mastery of various lexical aspects, or as Qian (1999) indicates: how well learners know a word. In terms of loanwords in the native lexicon, Korean students possess many basewords, and therefore the core meaning sense of much English vocabulary, but there is little relative depth to this knowledge. As a result, in the English as a foreign language acquisition process, the core meanings of these basewords would need extending to cover the range of meanings usually possessed by the words when used in English, while different loanword types (pseudo-loanwords or false cognates, and hybrid terms) would require lexical meaning shifts to occur (see Daulton, 1999a, 1999b, 2003).

The third dimension of vocabulary acquisition involves both productive (use) and receptive (recognition) mastery of lexical items. In this regard, Melka (as cited in Schmitt, 2000) views receptive and productive mastery of vocabulary as poles of a continuum, and in relation to this, it is believed that much of the English loanword knowledge that students possess is active at the receptive level (on a point of the word knowledge continuum) but not active at the productive level. To this end, both the students' receptive levels need reinforcement and their productive levels need activating with any approach that incorporates loanwords as viable lexical units from which to engage in the learning of EFL. Consequently, the mental lexicon cannot be seen as a module stored apart from other forms of knowledge in long-term memory (Hulstijn, 1997). However all words may be located within a single store with the subset of L1 words more strongly associated with each other than those of the foreign language as part of a dynamic system. This dynamic system allows words to

be stored in unassociated fashions, which can then be linked by one formal or semantic feature and later by more features, with the strength of these associations for each word being different at various times with these individual associations increasing and decreasing over time.

Such an approach is designed to promote foreign language lexical development through structured use of the L1, and relies upon the production of communicative competence, much like the CLT (Communicative Language Teaching) Approach, to develop pragmatic competence. This technique is also akin to the Lexical Approach, in that development of learner proficiency occurs by focusing on lexis, or words and word combinations. An increase in competence and communicative power is achieved by extending the learners' repertoire of lexical phrases, collocational power, and increasing the mastery of pre-existing vocabulary familiar to the learner through their native language.

Lewis's (1993, 1997a, 1997b) lexical syllabus is based on word patterns, while Willis's (1990) lexical syllabus is word-based. The Loanword Approach for vocabulary building and teaching EFL to Korean students is akin to both of these. Since the Lexical Approach relies on word chunks (or groups of words as phrases) to develop the pragmatic competence of learners, and Korean students are not able to do this with L1 word forms that they use as part of the foreign language in loanword transfer, the Loanword Approach could be used as a step before the lexical approach. It can also extend the CLT Approach by not just using English to teach English but using the English inherent within the native vernacular to teach English. The Lexical Approach, like that of the Loanword Approach, does not require radical methodological changes either (Moudraia, 2001).

Several elements of how the Loanword Approach compares to the Lexical, Natural, and CLT Approaches (based on Richards & Rogers, 2001) are detailed in

Table 4.1, Table 4.2, and Table 4.3 respectively. The major characteristics of the
Loanword Approach toward language and situated learning (see Tretiakov, Kinshuk
& Tretiakov, 2003) are as follows:

1. The local cultural context and learning environment must be considered in
   the teaching of EFL (Critchley, 1998; Ellis, 1994; Oka, 2004; Weschler,
   1997).

2. Specific and judicious use of the native language can provide support and
   scaffolding for learner target language development, with links and strengths
   of association between the native language use of loanwords and the use of
   these terms in English promoting the pragmatic and communicative
   competence of learners (Daulton, 1998, 1999a, 1999b, 2003; Kimura, 1989;
   Nation & Newton, 1997; Shaffer, 1999; Shepherd, 1996; Simon-Maeda,
   1997).

3. For false-beginners, native language English loanword use can be particularly
   helpful for developing language/vocabulary acquisition in the target language
   learning phase (e.g. for homework, especially with large classes using set
   syllabuses such as in universities and high schools), with focus on production
   in the practice phase (e.g. in the classroom, particularly when set syllabuses
   are used and when learners are face-to-face with instructors) (Nation, 1990,
   2001, 2003).

4. A Loanword Approach to EFL vocabulary teaching should be utilized, or
   extended, by the use of other approaches, in contexts such as in Korea, where
   a large number of basewords relating to loanwords can be found on such
   vocabulary lists as the general service list (GSL) and the British national
   corpus (BNC) (Daulton, 1999b, 2003).

Table 4.1

Comparing elements of the lexical approach to the loanword approach

Lexical Approach	Loanword Approach
Lexis plays a central role in language teaching and learning.	Lexis that stems from English loanwords can play a central role in teaching and learning with students, viewing this lexis as a 'target language knowledge kernel'.
Lexis should be the central organizing principle of any meaning-centred syllabus.	Meaning-based activities need to be provided to learners, as lexis from the 'target language knowledge kernel' is used as the organizing principle.
Importance of contrast in language awareness must be recognized.	Importance of contrast and similarity, between the L1 and foreign language, in language awareness must be recognized.

Table 4.2

Comparing elements of the natural approach to the loanword approach

Natural Approach	Loanword Approach
For beginners – designed to help them become intermediates.	For false-beginners designed to help them gain confidence, fluency, and develop pragmatic and communicative competence in the use of target language vocabulary.
Emphasizes the primacy of meaning, with an importance on vocabulary.	Emphasizes a primacy of meaning, with an importance on lexicon that is similar or that allows for positive transfer between native and target languages to occur.
Explicit attention placed on grammar is not required.	Explicit attention placed on grammar is not required, rather explicit attention is placed on lexical use and misuse of loanwords (i.e. positive and negative transfer) and using this to develop learning gains.

Table 4.3

Comparing elements of the communicative language teaching approach to

the loanword approach

Communicative Language Teaching	Loanword Approach
Uses English to learn English, although judicious use of the first language (including translation) is acceptable, with comprehensible pronunciation sought.	Uses English and the English within the native vocabulary to learn English, with a view that limited and judicial translation is acceptable, with comprehensible pronunciation sought.
Error correction generally occurs when it impacts meaning not accuracy, language being created by trial and error.	Error correction (or perceived foreign language error correction) occurs when it affects meaning, so this meaning can be linked associatively and then used to build appropriate use of vocabulary, hoping to minimize the trial and error process or misinterpretation of vocabulary use.
Language items are contextualized in materials, centring on communicative functions.	Language items, including loanwords, are contextualized within materials, centring around various functions including communicative needs.
Language learning is learning to communicate and to communicate effectively, with communicative competence the aim.	Language learning is learning to communicate and communicate effectively in both the national context (understanding the local 'variety' of English) and international context (understanding 'standard' English equivalents of locally used or misused English terms), where communicative competence is the aim.
Motivation stems from interest in what is being communicated, with teachers helping learners in ways that motivate them to work with language, and sequencing is determined by any consideration of content, function, or meaning that maintains interest.	Motivation stems from learners determining how it is that they use English, developing material to assist learners to work with the language, and sequencing is determined by any consideration of content, function, or meaning that maintains interest.
Attempts to communicate are encouraged from the onset, with the struggle to communicate seen as the best process of acquiring the target language.	Attempts to communicate are encouraged from the onset, with the struggle to communicate coupled with use of the L1 for scaffolding seen as the best process for acquiring higher levels of proficiency and fluency in the target language.

Like the Lexical Approach and Communicative Language Teaching Approach,

the Loanword Approach takes a view on the theory of language as communication

with lexis as the basis of language. The goal of language teaching is to develop a

'communicative competence' (Hymes, 1972) that incorporates communication and

culture. In other words, use of the Loanword Approach aims at allowing learners to

be communicatively competent in the international as well as the national context,

achieving proficiency in both the use of the local 'variety' of English as well as the

English equivalents for this terminology – proficient in two dialects of English. The

Loanword Approach therefore subscribes to tenants of the theoretical base of both

the Lexical Approach (Lewis, 1993, 1997a, 1997b), and the CLT Approach (from

Richards & Rogers, 2001). These are: (a) language is a system for the expression of

meaning, and lexis is the basis of language, (b) interaction and communication is the

primary function of language; successful language is a wider concept than accurate

language, (c) structure reflects functional and communicative uses of language, with

lexis the guiding principle, (d) grammatical and structural features are not the

primary units of language, grammar is not the basis of language, and mastery of

grammatical systems is not a prerequisite for effective communication.

Furthermore, "the language learner does not start with a *tabula rosa*" (Spolsky,

1989, p. 117). Contrastive Analysis (CA) of two languages allows potential problems

of interference to be predicted and addressed via carefully constructed instructional

content. It also allows the linguist to use the best linguistic knowledge available to

him in order to account for observed difficulties in foreign language learning

(Spolsky, 1989; Wardhaugh, 1970). Selinker (1992) also shows that there are "… at

least three generally distinguishable sets of theoretical claims resulting from CA" (p.

21), these three claims could be extended to loanword usage as a basis for

vocabulary acquisition in the Korean EFL context, as seen in Table 5.

Table 5

Contrastive analysis and loanword approach claims

Contrastive Analysis Claims	Loanword Approach Claims
The learner in an SLA situation 'expects to find' some 'equivalent' in the target language to native language structures: productively, receptively, or both	Use of direct loanwords shows learners that there is evidence of equivalence between the native and target language
Such a learner 'has to learn' to produce something different from his native language in his attempt at learning the target language	Elements, like truncated, hybrid, and shortened loans, must be produced differently in English
Such a learner has 'considerable trouble' (in some way) with a target language pattern which is different from the native language	There are terms that must be recontextualized, like pseudo loanwords and false cognates, before 'standard' English usage of the term can occur

Ultimately this research, along with Nation (2003), emphasizes that "the L1 clearly has a very important role to play in the deliberate learning of vocabulary" (p. 4). Encouraging learners to notice borrowings, and the use of loanwords to assist in the learning of English, "is a very effective vocabulary expansion strategy" (Nation, 2003, p. 4) and one that involves the deliberate exploration of first and second language relationships. In terms of orthography, Schmitt (2000) also mentioned that, when L1 and foreign language words are similar, due to either etymology or a loanword basis, they can facilitate learning. As recent research into teaching practice indicates, the L1 is being used as a learning resource, and "when the native language *is* used, practitioners, researchers, and learners consistently report positive results" (Auerbach, 1993, p. 18). Furthermore, Critchley (2002) demonstrated that in communicative English language teaching today the L1 has a clear supportive role, and cites several researchers (e.g. Auerbach, Pellowe, and Burden) to support this claim.

Application: CALL System Foundations for Vocabulary Development

A number of CALL software systems, usually unable to deal with issues relating to crosslinguistic influence, have now been developed that use aspects of transfer to assist learners with language acquisition (see Bull, 1995). In part, these systems, by indicating similarities between target and other languages including the native language, may result in learning through positive comparison, as in many cases the first language will be the dominant source of transfer. This conception of transfer is similar to what Lado (1952, p. 2) once described as individuals transferring "the forms and meaning, and the distribution of forms and meanings of their native language and culture to the foreign language and culture". More recently, Schachter (1996) has argued that knowledge of a prior language will facilitate or inhibit foreign language acquisition in adults depending on the similarity or dissimilarity between the languages. With these two perspectives in mind, what in the target language is exact or similar in the native language will be more easily absorbed by the learner as linguistic knowledge in an EFL situation. In regards to vocabulary acquisition, the understanding of meaning and usage for direct loanwords may be more easily acquired over that of pseudo-loanwords, and for the practical application of using pseudo-loanwords to assist in the vocabulary acquisition process, interlingual errors become a focus (see Richards, 1971). In this case, pseudo-loanwords used in the L1 are considered a greater threat to vocabulary acquisition over direct loanwords, as understanding of their use in the L2 may prove more difficult to acquire, even though learner use of direct loanwords in the L2 may also not prove optimal. Furthermore, to solidify the usage or reconstruction of such native language material in the target language as a learner strategy for vocabulary acquisition, an intentional means of being able to do so must be pointed out and

emphasized to students before positive transfer can occur. That is, explicit learning is consistently effective (see Beaton, Grunberg & Ellis, 1995; Laufer & Shmueli, 1997; Prince, 1996), as is direct versus an indirect means of vocabulary instruction (Folse, 2004; Johnson & Pearson, 1984; Zimmerman, 1997). Noticing can be enhanced and recycling opportunities provided through strategies of explicit lexical learning. It is these two factors, noticing and recycling, that effectively foster integration of vocabulary in long-term memory, provided that form and meaning are attended to appropriately (Prince, 1996). This explicit focus on similarity markedly contrasts with Lado's perception, whereby the role of language teaching appears to have been interpreted as essentially focusing upon the points of difference and then presenting these points of difference in a manner of massive practice. Kimura (1989) also provides support from the EFL context to challenge Lado's assertion that loanword knowledge limits the range of English meanings learners possess for a term, as loanword knowledge (from the L1) encourages learners to add meaning (acquired from target language) to the pre-existing meanings they possess. This is particularly true in the case of pseudo-loanwords and hybrid terms, but also for direct loanwords that have undergone semantic narrowing when borrowed.

Technology application is conducive to vocabulary teaching according to Levy & Stockwell (2006), but for vocabulary acquisition to occur from a program of foreign language study, learners need to be exposed to a variety of contexts that include recycling of terms, "critical if they stand a chance of becoming readily accessible in long-term memory" (Koprowski, 2006, p.1), and provide a complementary combination of both explicit teaching and implicit learning (Nation, 1990; 2001). A number of the key principles for explicit vocabulary teaching are highlighted by Sokmen (cited in Schmitt, 2000) and these are produced below. Each principle has been extended by taking into account research on learning with

multimedia (Alessi & Trollip, 2001) and vocabulary acquisition (Nation, 1990, 2001), to show how it relates to a Loanword Approach based CALL vocabulary teaching system:

- Build a large sight vocabulary, by utilizing modern processing and multimedia powers of modern computers along with their large storage capacity, and by using the lexical store of English terminology inherent within the native vocabulary as the lexical database.

- Integrate new words with old, through various exercises and activities in particular units or activities.

- Provide a number of encounters with a word, by incorporating terms throughout system activities and by allowing users to redo these activities as many times as they wish by providing links back to various points in the system.

- Promote a deep level of processing, achieved through the utilization of various techniques such as classification or sorting-based tasks, multiple-choice selection-based tasks, clue-type matching-based tasks, and so on.

- Facilitate imaging, by relating the terminology to both the L1 and foreign language setting through contextualization in activities, and in construction of the user interface.

- Make words 'real' by connecting them to the student world in some way through situated learning, by utilizing English loanwords from the native language and creating a culturally relevant interface focusing on the local setting.

- Use a variety of techniques, from activities to acquisition methods through to design elements.

- Encourage independent learning strategies, by utilizing aspects of the

learning system to promote motivation and encourage students to focus on the vocabulary items and relate their foreign language usage to real life use and experience from the first language.

The lack of intelligence and interactivity of many multimedia-based software systems, as Warschauer (1996) pointed out, can limit the ability of CALL to provide meaningful and authentic communication. However, Pusack and Otto (1997) recognized that multimedia systems shift the emphasis of learning toward that of 'input and intake', and can facilitate authentic learning and an accurate portrayal of the target language as a result of housing vast quantities of virtual realia. Stoney and Oliver (1999) also indicate that multimedia develops and fosters cognitive engagement through its ability to hold and attract student focus and attention. Multimedia systems are also consistent (Hick, 1997) as they provide the same learning content to all learners. This is supported by Adams (in THINQ, n.d.) where it has been shown that a 59% variance occurs in instructor-delivered material as opposed to a 19% variance when learners participate in the use of multimedia-based modules. Computer-based instructional variance can perhaps be explained by the unique navigational selection of students (Schar, Schluep, & Schierz, 2000). The instructional consistency provided through multimedia can be viewed positively, particularly in the university English program setting of Korea where the reliability of delivering the same learning content and quality of service to a large number of students is important.

Non-linear navigation and the interactivity that can be built into multimedia environments offers advantages over other systems and distinguishes multimedia from other forms of computer assisted instruction (Davies & Crowther, 1995). Software systems built on such platforms offer interactivity by providing students the means to control aspects of the learning environment, and integrate audio, graphics,

text, and video within the system. Further, Soper (1997) has also shown that the individual use of multimedia systems allows students to review and apply knowledge for themselves as often as they like, receive rapid feedback, assessment, and answers, and put this knowledge to immediate use and learn from their mistakes. Soper (1997) also favours systems of single-user design, as they can develop within students the ability to complete work without supervision, and enable students to take more responsibility for their own independent learning. Whatever the system design, however, multi-user or single-user multimedia use requires students to be self-regulating.

For explicit language teaching, CALL software systems are ideally suited to provide such contexts through multimedia, and their re-use enables recycling to occur at the demand of the student, while assessment can be embedded within activities along with immediate and extensive feedback. Such abilities, including the patient, interactive, and reinforcing capabilities of CALL systems, have been widely documented (Ahmad, Corbett, Rogers, & Sussex, 1985; Alessi & Trollip, 2001; Ariew & Frommer, 1987; Levy, 1997). In fact, single-user courseware allows for autonomous context-based learning, at times convenient to students working at their own pace. It is learner-centred and learner-controlled, and can ensure the delivery of the same content to each individual participating in large-scale study programs like university English courses in Korea. It is such a system, in just such a context, that has been designed, deployed, and empirically tested throughout the course of this research so that the effectiveness of using L1 vocabulary for lexical development in a practical Korean EFL setting can be assessed.

Summary

This chapter consisted of four major segments. The first and second segments focused on the Korean educational environment and aspects relating to EFL and ICT. The third section introduced the complex cultural environment of Korea and advocated the necessity of considering the local cultural context when designing and implementing teaching materials. The final section focused upon linguistic issues. A unique approach, one that will come to involve CALL and L1 usage, was envisioned for the teaching of EFL in the local Korean educational environment. The proceeding chapter will begin to examine and detail the methods by which to implement and test such an approach in the Korean context.

CHAPTER THREE
RESEARCH METHODS

Overview

This chapter presents the research methods applied in the study. It commences with the research approach that informed the design of the empirical investigation. Second, the research questions are presented. Then the design of the empirical investigation is explained as a series of phases. Third, the target population, the sample, instrumentation, and data analysis techniques are explicated. Finally, the mechanisms for ensuring reliability and validity are explained.

Research Approach

The research method applied within this study can be defined as a 'within-methods' approach (Creswell, 1994). A within-methods approach was selected as it allowed for multiple methods of investigation; that is, quantitative data collection strategies employing both the one-group pre-test/post-test experimental method and also the survey method. Typically, the assumption behind the use of this approach is that any bias inherent in the study can be neutralized in conjunction with other data sources and collection procedures. As Borg and Gall (1989, p. 641) iterate, although powerful, "the experiment is not a perfect method;" even well designed experiments are refutable. Consequently, in addition to employment of the experimental method, the survey method allowed for data to be collected using variables not manipulated in the experiment but considered influential on the dependent variable.

Experimental research involves manipulation of one or more variables and tests for the effect of this manipulation or treatment on one or more dependent variables. It is a powerful method that can provide strong evidence for confirmation of

hypothesised cause and effect relationships (Fraenkel & Wallen, 2003). The one-group pre-test/post-test experimental design (pre-test, treatment, then post-test) is the same as that of the pre-test/post-test design but there is no random assignment of multiple conditions, and is thereby considered quasi-experimental. The most common reason for employing a quasi-experimental design is the inability to randomly assign persons to conditions, as was the case with this research. It is also such design types that are used "when experimental and control groups are such naturally assembled groups as intact classes, which may be similar" (Best & Kahn, 1993, p. 151).

The survey method provides systematic data collection relating to perceptions and attitudes of a given group (Fraenkel & Wallen, 2003), and, as Best and Kahn (1993) illustrate, surveys are useful assessment and evaluation tools. In the case of this study, attainment of the research objectives required collecting information from the subjects of the experiment about their disposition towards computer assisted learning of English to supplement the results from the experiment.

Research Questions

This research sought to understand the interaction between multiple dimensions of computer assisted learning and English foreign language acquisition of Korean freshmen university students. In particular, to examine how the student's knowledge of English words adapted for use in the Korean vernacular – loanwords – is affected by their attitudes towards computerized instruction, their preference for certain methods of learning and teaching, and also by the attributes of computerized instructional packages.

The research questions were:

1. Is student understanding of pseudo-loanwords associated with dispositions towards computer assisted learning of English as a foreign language?

2. Does the application of different computer assisted language learning instructional strategies affect student understanding of pseudo-loanwords?

Obtaining data to answer the research questions was contingent on the following objectives: (a) to develop a linear scale to measure Korean student dispositions towards computer assisted learning of English as a foreign language; (b) to develop a linear scale to measure Korean student understanding of loanwords for use as the pre-test and post-test in the experiment; and (c) to develop two computer assisted language instructional modules as the treatment in the experiment.

Research Design

The empirical design comprised four stages. The first stage was development of an instrument to measure Korean student dispositions towards computer assisted learning of English as a foreign language and also development of a test to measure Korean student understanding of loanwords. Second, the survey of student dispositions towards computer assisted learning of English as a foreign language was administered concurrently to the sample of students completing the pre-treatment test. Third, two computer assisted language instructional modules were administered as the experiment treatment to two different groups of students. Finally, the test of student understanding of loanwords was re-administered.

A multiple regression analysis (SPSS, 2003) was conducted to ascertain whether disposition towards computer assisted learning of English as a foreign language (independent variable) was associated with student understanding of

pseudo-loanwords (dependent variable). The effect of the treatment on the dependent variable of student understanding of pseudo-loanwords was estimated by one-way analysis of variance (ANOVA) (RUMM, 2002) between Rasch model calibrated pre- and post-treatment test scores.

Target Population and Sample

The target population was all the freshmen (first year students) in a mandatory University English Program in a Korean university. To ensure that minimal linguistic differences between experimental groups existed, the sample was restricted to intermediate-level students from this program as determined by university placement tests. Participants therefore came from a cluster sample of almost 2,000 students, which were assigned to classes and instructors in blocks based on major, and this resulted in an available overall sample of approximately 150 students. Although such a small sample size, and restriction of the sample to one school, may limit the ability to generalize results, this has the advantage of affording the researcher greater experimental control (Fraenkel & Wallen, 2003).

Instrumentation

1. Survey of Student Attitudes towards Computer Assisted Learning in EFL (SSACAL)

Theoretical Framework

The survey was based on three postulated dimensions of student attitudes towards computer assisted learning in EFL: (a) disposition towards computer assisted instruction (CAI); (b) Korean learning style; and (c) English as a foreign language

learning style.

Item Writing

Instrument items were developed by the researcher relying on existing questionnaires, including a survey examining changes in Korean cultural assumptions and attitudes toward English language learning (refer to Windle, 2003), along with a taxonomy framework of vocabulary strategies stemming from the Oxford Strategy Inventory for Language Learning (see Park, 2001). The survey (see Appendix Two) comprised 114 items organised respectively into the following three major sections and subsections. For more detail on the content of the sections and subsections, refer to Appendix Two. The major sections and sub-sections of the instrument were:

Section One: Disposition towards computer assisted instruction.

(a) Computer competency;

(b) Preference for computer-based learning; and

(c) Preference for learning English through CAI.

Section Two: Korean learning style.

(a) In-class relations;

(b) Desired characteristics of instructors; and

(c) View of education.

Section Three: English as a Foreign Language learning style.

(a) Preference for cultural representation;

(b) Loanword use; and

(c) Vocabulary acquisition strategies.

2. Test of Student Understanding of Pseudo-Loanwords (SUPL)

To measure student understanding of pseudo-loanwords, a test (see Appendix Three) was constructed and administered pre- and post-treatment. The test was designed to determine the ability of students to identify the meaning of a Korean pseudo-loanword by selecting from one of four statements written in English.

The number of test items was limited to 50 so the test could easily be completed within one lecture period. The items required recognition of the correct English meaning of pseudo-loanwords. These loanwords were selected at random from the vocabulary applied in the activities comprising the experimental treatment.

The test measured one aspect of EFL learning: student understanding of pseudo-loanwords expressed in English.

Item Writing

Multiple-choice is a common type of selected-response item used in classroom achievement tests. The format is therefore easily understood and students have had a high exposure to such test style formats (Mandernach, 2003). Multiple-choice items are also objective, and this supports speedy, reliable, and efficient scoring. In regards to the number of items tested, multiple-choice tests can be completed in a short period of time (Claycomb & Kysilko, 2000), and as Mandernach reminds us, their versatility sees them able to target a range of learning objectives such as analysis, comprehension, factual knowledge, and evaluation. The multiple-choice test constructed for this research sees each item contain a stem with four response options. The stem consists of a short statement, in which a single word is underlined. The underlined word comes from the pseudo-loanword category, and it is the meaning of

such a term that students must select from one of the four response options. The response options immediately follow the stem, contain three distracters and, in the form of the English language definition, one correct answer.

3. CALL Modules

Conceptual Framework and Development of Modules

The two multimedia-based CALL modules were built on an existing multimedia/hypermedia software system framework and shared a common interface design. The two multimedia modules were based on "traditional-" and "edutainment-based" CD learning titles. At the macro level, both modules employed three similar types of task, and thereby each module maintained the overall objectives that come to underpin each activity section (i.e. classification, multiple-choice, and identification). In the edutainment-based module the exercises are in language puzzle form (see Backer, 1995), while those of the traditional-based module are similar to vocabulary exercises found in 'typical' language learning textbooks (refer to Chiquito, Meskill, & Renjilian-Burgy, 1997).

With the above in mind, two instructional strategies needed to be chosen to differentiate the modules, and these were based on the phases of behaviouristic CALL and communicative CALL (as presented by Warschauer & Healey, 1998), and involve taking on a restricted CALL and open CALL approach (see Bax, 2003). These approaches were selected since behaviourism and cognitivism are the two dominant theoretical positions in the field of learning with interactive courseware (Atkins, 1993; Hannafin, Hannafin, Hooper, Rieber, & Kini, 1996; Jonassen, 1991). In addition, the software also takes into account the more contemporary theories of interactive multimedia CALL, and also hypermedia instructional design. It is

important to note that software systems employing the communicative phase/open CALL approach can still include those of the drill-and-practice type akin to a behaviouristic phase/restricted CALL approach. The difference between a behaviouristic (restricted CALL) and communicative (open CALL) model in this case is the level of student choice provided, and levels of control and interaction. As "the dividing line between behaviouristic and communicative CALL involves not only which software is used, but also how the software is put to use by the teacher and students" (Warschauer, 1996, p. 3). A more detailed explanation of the CALL modules is provided in Appendix Four, while a copy of the software can be found on the accompanying DVD-R disc.

Beta Testing of Modules

After the modules were fully developed, beta testing of the two software systems could begin. Several L1 English speaking EFL instructors trialled the software, leading to a number of minor bugs being corrected, and the wording within several activities changed. Modules were then given to a small group of students, similar in composition to that of the sample population, for installation on their home computers and for testing. This group of students were able to save activity data to diskette for submission, and reported no errors from engagement with the language activities they were assigned to complete. After this testing period, the modules were produced for final distribution and readied for delivery to the instructor responsible for administering treatment.

Data Analysis

Data analysis of survey and test results was conducted using RUMM and SPSS. The Rasch model was employed to refine and calibrate the data, while multiple regression and analysis of variance (ANOVA) were applied to test the hypotheses.

Methods

Rasch Rating Scale Model Analysis

The Rasch model locates person ability and item difficulty on the same interval scale. To confirm that the survey and test instruments were measures, the residual and Chi-square values of the data collected were estimated. A low residual ($< \pm 2.0$) means an items' data fits the model well, with the actual response close to the expectation of the model, whereas a high residual indicates actual performance different to that expected. Chi-square probability for item-trait interaction indicates how well students agree on difficulties of items across the scale and whether the analysis of a single trait, or assumption of unidimensionality, is reasonable (Cavanagh & Romanoski, 2004). A high Chi-square probability ($p > 0.05$) represents a good match of the data to the model, while low Chi-square probability ($p < 0.05$) shows a poor fit of the data to the model.

Multiple Regression Analysis

Data from the SUPL was used for regression analysis with pre-test data from SSACAL. The survey dimension and individual item were specified as the independent variables and the test score logits as the dependent variable.

ANOVA

To examine the effect of the treatment, an item by item one-way analysis of variance between pre- and post-treatment test data was conducted. As there were two modules, or two forms of treatment (CD 1 and CD 2), a separate ANOVA was required for each. The ANOVA determined which questions were more successfully answered after the treatment.

Survey Refinement

The distributed survey was based upon a developed and translated instrument, which had been used with focus groups and allowed for initial fine-tuning and refinement of questions for presentation to participants in the native language. Prior to distribution, for a final check on instrument appropriateness and validity, the survey was split into four mini-surveys. Each mini-survey was disseminated to one of four trial groups consisting of around 30 students each. Trial groups consisted of intermediate EFL level freshmen from a university English program at a school different to that of the students who participated in the final empirical investigation. The data was then collected and examined. Taking the results of this analysis into consideration, the survey was then fine-tuned.

The survey finetuning process consisted of examining two aspects of the data in SPSS: Cronbach alpha reliability, and the frequency of responses to each question item. These analyses were used to determine if the four-point Likert scale was working effectively, and if normal distribution of responses across the four categories existed.

For trial group one, the analyses found that items 1 to 41 of the survey showed consistent responses to the different items with an alpha reliability of 0.93, and that the middle two categories were most frequently selected with less in the *strongly*

disagree and *disagree* categories. These items worked well, and no changes were made. Also no changes were required for items 94 to 121, distributed to trial group four, as category use was normally distributed for most items and the alpha reliability was 0.82.

Changes were required amongst items 42 to 59 distributed to trial group two, and items 60 to 93 distributed to trial group three. Items 42 to 59 ($\alpha = 0.83$) were found to possess normal distribution for most items, as were items 60 to 93. As items 54 to 59 formed part of a second construct or second section of the survey, these items were analyzed separately ($\alpha = 0.83$) and a number of changes considered. Items 54 and 57 were then removed, leaving four items under the 'in-class relations' construct ($\alpha = 0.54$). It also appeared as though each student was responding differently to the different items 60 through 93 comprising the 'Korean learning style' construct. The solution was to use the existing data to identify items from this section, and across sub-sections, that elicited similar responses. A process of elimination identified 12 items that elicited similar responses and maintained good internal reliability ($\alpha = 0.74$). These were: 60, 61, 63, 64, 68, 69, 70, 71, 72, 73, 74, and 76. It was then decided that the remaining items in the section would be deleted, while two items (68 and 69) were moved to a different sub-section. After these adjustments were made, a 95-item survey was ready for deployment.

Test Refinement

The test was based on an existing researcher-developed instrument. Since this test had previously been deployed, existing data was analysed to determine the suitability of the instrument for this research. After determining test suitability, and constructing an appropriate instrument, the test was trialled with a small group of around 50 students. Again, these students were intermediate EFL freshmen enrolled

in a university English program at a school different to that of the students who participated in the final empirical investigation, and were different students to those participating in the survey trials. Results were then collected and analysed using RUMM so that individual item fit statistics could be examined. Any items showing disordered thresholds could then be identified and removed. Other items, such as those being too difficult or too easy, could also be identified and removed as necessary. The test instrument was then ready for distribution.

Research Question One Hypothesis

This research employed CALL as a learning treatment in the process of acquiring understanding of pseudo-loanwords. It was therefore important to determine if student disposition toward computer assisted learning of English as a foreign language was associated with student understanding of pseudo-loanwords. It was hypothesized that a relationship between these two variables existed and multiple regression analysis was performed to determine if this was the case.

Research Question Two Hypothesis

If utilized effectively it was hypothesized that the English vocabulary acquisition progress of students can be advanced through the specific inclusion of loan terminology in EFL teaching materials tailored specifically for use in the Korean context. This can be evidenced by learning gains from all students involved in the experiment, proven by comparison of pre- and post-test results. Further it was expected that one instructional strategy or treatment would exhibit greater effect. This could be confirmed through ANOVA by the vast majority of test items for one treatment group showing a greater amount of statistically significant change than those of the alternate treatment group. Only after comparison of the significant

changes in each of the treatment groups can this hypothesis be proved.

Reliability and Validity Mechanisms

Reliability is the expectation for an instrument to provide consistent and accurate results. Validity relates to the capacity of an instrument to measure what it is designed to measure. In Rasch analysis, reliability is estimated for both persons and items, with person separation reliability an estimate of how well persons can be differentiated on the measured variable, while validity stems from the ability of the instrument to measure a single trait or underlying construct. This means that person-item fit comes to confirm instrument reliability, and assists in determining validity by ensuring fit of an instrument to a unidimensional measurement scale, which in the case of this study is based on the individual trait(s) of the survey and test instruments. Factors concerning the internal validity of the instruments and treatment employed need considering, since "… a well-designed experiment has to have high internal validity to be of value" (Ravid, 2000, p. 9).

To obtain reliable and valid data for hypothesis testing, the survey and test both underwent reliability and validity checks by trialling before final deployment, and Rasch analysis before use in hypothesis testing. The trialling and refinement process utilizing focus group interviews, piloting and trial groups, and undertaken with representative samples, was able to verify content validity of survey items and construct validity of test items and provide data to assist in finetuning the instruments. For the survey, internal consistency and response frequency were also examined to ensure scale effectiveness. These processes assisted in developing a valid and reliable instrument and ensured the survey and test were appropriate for deployment, and that the data obtained was appropriate for data analysis. This led to necessary refinement of the survey from a 121-item instrument to a 95-item well measuring survey focused

on specific constructs, and saw the pre- and post-test instrument reduced to a 40-item test from a 50-item one to match the ability level of intermediate EFL students. Ultimately, Rasch analysis assisted in determining the reliability of the test in terms of person-item difficulty calibration and the survey in terms of person-item response calibration, and validity of the test and survey by ensuring fit of the items to the model and thereby effective measure of a single trait. The trait for the survey was 'student attitude towards computer assisted instruction in EFL', and for the test 'student understanding of the English meaning of pseudo-loanwords'.

To achieve consistency of answers and scores collected by instruments, or reliability, objective scoring methods were used along with a method for coding data for entry into computer for analysis. In this regard, for each closed-ended question, the survey was designed to contain a 4-point Likert style response grade. This provided standardized data for analysis and coding by ensuring all subjects responded to the same options. Also the pre- and post-test format was in the form of multiple-choice as this allows for the collection of data that is easily quantifiable and can be accurately and objectively marked. Multiple-choice items were checked to ensure that there was only one correct response, so questions were not interdependent, and the order of correct responses was randomized to reduce test wiseness. Further, students possessed a unique code so that neither data collector nor researcher was aware of which student had participated in what treatment when instruments were being collected and when data was entered into the computer for analysis.

Due to the nature of treatment, identical data was presented to each participant: same learning content, correction, and feedback. This is important since it was imperative that all participants received the same learning content. The CALL modules were designed to be homework-based so they could be incorporated within

an existing syllabus and therefore be less obtrusive on student work requirements and existing teacher in-class commitments. This also minimized instructor-bias, and controlled attitudinal effect by incorporating treatment as part of normal taught-course homework procedure. However, subject characteristic threats may have been present as participants could choose to neglect the material or complete it in one sitting, and as such, incremental homework submission dates were established. Another danger was location threat, as the homework could have been undertaken from any location (for example: dormitory, internet cafe, or home environment). Reliability and validity of the treatment was ensured through alpha testing of the software on several operating systems, and beta testing with instructors and target end users. The administrating instructor was also provided with training in how to utilize the CALL materials so that assistance could be rendered to students as required.

Experiment participants were obtained from a sample of convenience and to reduce maturation and mortality risks, appropriate treatment groups were formed through a process of stratified sampling while experiment runtime was limited to half a semester. The short timeframe of two months for the treatment may be considered a limiting factor. However, experiments of this length are not unheard of in the literature (for example, Hegelheimer & Tower, 2004). The participating students were all of an intermediate level of English, and this assisted in limiting regression as lower or higher level students may have performed better or worse throughout the experiment. The experiment was refined to a single school for increased control, and to expose each experimental group to identical data collector characteristics, a single instructor was responsible for collection and deployment of the survey, pre-test, treatment, and post-test. This could have led to implementation threats, but by using the same instructor, the same data collector bias was present for each experimental

group. To alleviate data collector bias, specific instructions and coaching were provided regarding the deployment and collection of instruments. So too, in order to reduce location threat, the instructor delivered both the survey instrument and pre- and post-test in the same location and at the same time of the weekly class schedule. The survey was also translated to increase salience, and a Korean assistant was on hand for support.

The specific impact of threats on the reliability and validity of this research, and the process as to how these were minimized, is discussed in depth at the end of Chapter Five.

Summary

This chapter specified the methods and analysis applied. The experiment, and the conceptual framework behind it, was outlined along with the research questions. The target population and sample, the instrumentation, and the data analysis techniques were also introduced, as were aspects of instrument and treatment reliability and validity. The following chapter will now illustrate the findings of the empirical investigation.

CHAPTER 4
RESULTS

Overview

This chapter presents the findings of the research. Initially the characteristics of the participating subjects are outlined. The results of the survey refinement process are then presented followed by the results of the test refinement process. The second part of the chapter presents the results of the statistical tests that were applied to test the implicit hypotheses within the two research questions. First to confirm that student dispositions towards computer assisted learning of English as a foreign language were associated with student understanding of pseudo-loanwords. Second, to confirm that application of Computer Assisted Language Learning (CALL) strategies would affect student understanding of pseudo-loanwords.

Sample Characteristics

The subjects were 108 university freshmen (34 men and 74 women) enrolled in a university English program in Korea during the second semester of 2004. Participants consisted of five groups of convenience with the following majors: childhood education, electronics, elementary education, pharmacy, and occupational therapy (see Table 6). Each class met twice a week for an hour to engage in learning English conversation with the same L1 English speaking instructor as part of the university's general elective requirements. The instructor was a 35-year-old American female with eight years of EFL teaching experience in Korea, and it was this person who was responsible for survey, pre-test, treatment, and post-test distribution and collection.

Table 6

Breakdown of participant population by major

Major	Male	Female	Total	Percent
Childhood education	3	24	27	25
Electronics	10	2	12	11
Elementary education	4	19	23	21
Pharmacy	8	13	21	20
Occupational therapy	9	16	25	23
Total	34	74	108	100

1. Survey Refinement

The survey administered to the students comprised 114 items. Although the instrument had been carefully constructed, it was anticipated that when data from the instrument were available, data analysis would suggest the instrument required modification. That is, some of the items were expected to elicit data that did not fit the requirements for objective measurement. The first stage in survey refinement was a RUMM analysis of the 114-item data – summary test of fit statistics, ordering of thresholds, and individual item-fit statistics.

RUMM Analysis of 114-Item Survey Data

Summary Test-of-Fit Statistics

Summary test-of-fit statistics were calculated for the 114 items and are presented in Table 7.1. When the data fit the model, the fit statistic has a mean near zero and a standard deviation near one. A negative fit statistic indicates the data fitted the model closely and a positive fit statistic indicates some 'noise' is present. The means of 0.00 and 0.10 show the mean difficulty of the items was close to the mean of the student scores. The standard deviations of 0.71 and 0.42 show a variance in student data that is lower than what would be observed in ideal data-to-model fit. The power of the test-of-fit statistic, based on the separation index of 0.88, shows the student logits (logarithmic units based on the logarithmic odds of answering positively) were well spread across a continuum. However the Total Chi Square Probability value of 0.00 (<0.05) suggests the items were likely not eliciting data on a unidimensional attribute of the respondents.

Table 7.1

Summary test-of-fit statistics for 114-item survey

	Item-Person Interaction			
	Items		Persons	
	Location	Fit Residual	Location	Fit Residual
Mean	0.00	0.07	0.10	-0.92
SD	0.71	0.48	0.42	3.82

Item-Trait Interaction		Reliability Indices	
Total Item χ^2	300.61	Separation Index	0.88
Total Deg of Freedom	228.00	Cronbach Alpha	N/A
Total χ^2 Probability	0.00		

Power of Test-of-Fit
Power is EXCELLENT
[Based on Separation Index of 0.88]

Ordering of Thresholds

Ideally, the order of responses for an item should match the rank order of student ability to affirm the items. That is, students with a highly affirmative view should have consistently selected the 'strongly agree' category.

This is illustrated in the following two figures in which student locations (logits) are plotted on the horizontal axis. Students who found the item difficult to affirm are located on the left and students who found the item easy to affirm are on the right. The probability for a response category to be selected is plotted on the vertical axis. The four curves are labelled according to the respective response categories (0 for strongly disagree, 1 for disagree, 2 for agree and 3 for strongly agree). The intercept on the horizontal axis corresponding to the intersection between two curves indicates the threshold (a logit value) between the two response categories.

Figure 2 for item 66 below, shows disordered thresholds. For this item, 'the young should learn', the intercept of Curves 0 and 1 has a higher logit value than for curves 1 and 2 whereas ideally it should be lower.
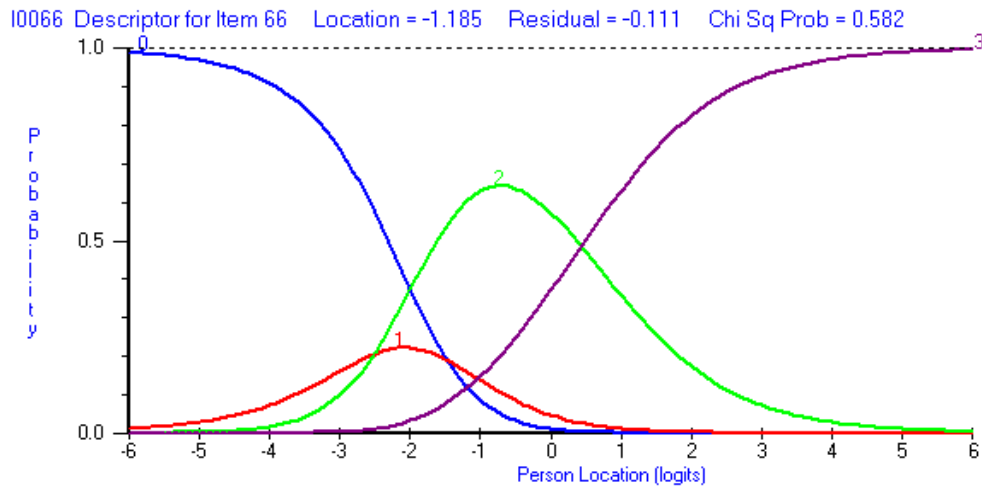

Figure 2: Item with disordered thresholds (un-centralised)

Figure 3 shows ordered thresholds for item 1. For this item, 'I use online learning', it can be seen that curve intersection points and corresponding logit values are ordered with increasingly higher values from negative to positive.
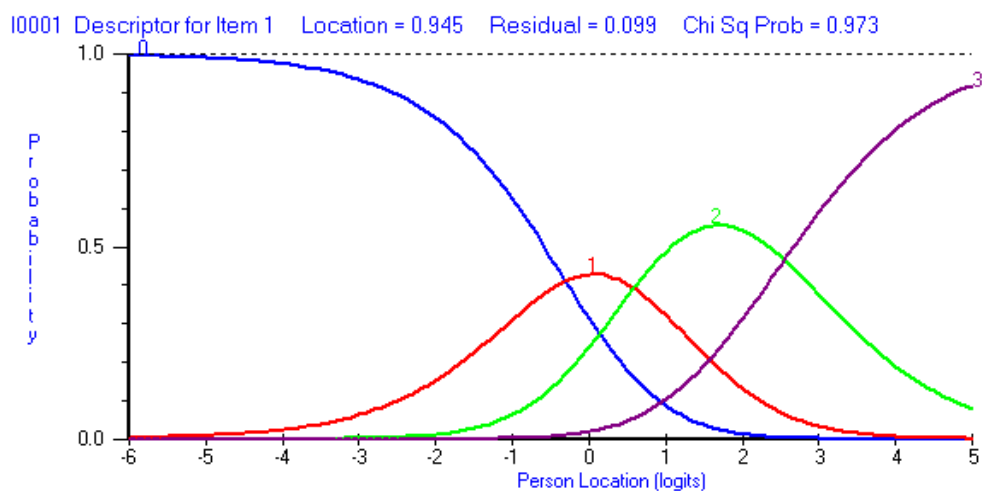

Figure 3: Item with ordered thresholds (un-centralised)

The ordering item thresholds for the 114-item survey are presented in Table 7.2. Seven items show disordered thresholds (items 31, 61, 66, 67, 85, 94, 104).

Table 7.2

Item thresholds for the 114-item survey (centralised)

Item	Thresholds		
	1	2	3
001	-1.26	-0.36	+1.62
002	-1.00	+0.33	+0.66
003	-2.28	-0.29	+2.57
004	-1.53	+0.97	+2.43
005	-1.47	-0.47	+1.93
006	-2.14	-0.58	+2.72
007	-1.84	+0.49	+1.40
008	-1.57	-0.26	+1.82
009	-1.50	-0.26	+1.76
010	-2.09	-0.13	+2.22
011	-2.12	+0.02	+2.10
012	-2.21	-0.15	+2.35
013	-1.53	-0.18	+1.71
014	-1.80	-0.39	+2.19
015	-1.83	-0.61	+2.44
016	-2.29	-0.30	+2.32
017	-1.35	-0.52	+1.87
018	-2.09	-0.13	+2.22
019	-2.35	+0.20	+2.14
020	-1.46	-0.43	+1.89
021	-1.59	0.26	+1.33
022	-1.63	-0.41	+2.04
023	-1.77	-0.26	+2.03
024	-2.13	-0.41	+2.54
025	-2.11	+0.20	+1.92
026	-1.98	+0.10	+1.88
027	-1.93	-0.80	+2.73
028	-2.10	-0.12	+2.22
029	-1.87	-0.29	+2.16
030	-1.83	-0.59	+2.42
031*	-0.75	-0.96	+1.71

Table 7.2 (Cont.)

Item	Thresholds		
	1	2	3
032	-0.96	-0.03	+0.99
033	-2.30	-0.45	+2.75
034	-3.77	+0.41	+3.36
035	-2.06	-0.36	+2.42
036	-2.85	-0.05	+2.91
037	-2.45	+0.27	+2.18
038	-2.71	+0.07	+2.64
039	-1.74	-0.18	+1.93
040	-1.88	+0.19	+1.69
041	-1.83	+0.06	+1.77
042	-2.60	+0.03	+2.57
043	-2.51	+0.03	+2.49
044	-1.62	-0.45	+2.07
045	-3.14	-0.28	+3.41
046	-2.63	+0.28	+2.35
047	-2.35	+0.16	+2.19
048	-1.97	+0.47	+1.50
049	-2.49	+0.70	+1.78
050	-1.74	-0.05	+1.79
051	-2.03	+0.13	+1.91
052	-3.22	+0.13	+3.08
053	-1.78	+0.09	+1.69
054	-2.41	+0.06	+2.36
055	-1.45	-0.35	+1.80
056	-0.97	-0.35	+1.32
057	-1.79	+0.02	+1.77
058	-2.14	-0.16	+2.30
059	-1.90	-0.36	+2.26
060	-2.22	-0.34	+2.55
061*	-1.66	+1.00	+0.66
062	-0.93	-0.56	+1.49
063	-1.47	-0.58	+2.06
064	-1.20	-0.80	+1.99
065	-1.28	-0.28	+1.56
066*	-0.29	-1.34	+1.63
067*	+0.44	-2.12	+1.68

Table 7.2 (Cont.)

Item	Thresholds		
	1	2	3
068	-2.14	-0.29	+2.43
069	-1.97	-0.27	+2.24
070	-1.00	-0.96	+1.96
071	-3.45	+0.34	+3.10
072	-3.66	+0.44	+3.21
073	-1.41	-0.74	+2.15
074	-2.24	+0.17	+2.07
075	-2.36	+0.68	+1.69
076	-2.72	-0.30	+3.02
077	-1.45	-0.88	+2.33
078	-1.32	-0.34	+1.66
079	-1.65	+0.17	+1.48
080	-2.12	+0.06	+2.06
081	-1.96	+0.43	+1.53
082	-1.94	+0.21	+1.73
083	-2.06	+0.29	+1.78
084	-2.55	+0.79	+1.76
085*	-1.20	-1.38	+2.58
086	-2.28	-0.03	+2.31
087	-2.15	-0.07	+2.22
088	-2.22	+0.00	+2.22
089	-2.21	-0.33	+2.55
090	-2.10	-0.50	+2.59
091	-1.91	+0.13	+1.78
092	-2.71	+0.00	+2.71
093	-3.52	+0.09	+3.43
094*	-1.08	-1.15	+2.23
095	-2.72	+0.05	+2.67
096	-2.35	+0.10	+2.25
097	-3.03	+0.46	+2.57
098	-2.89	+0.14	+2.75
099	-2.78	+0.73	+2.05
100	-3.21	+0.15	+3.06
101	-3.09	+0.75	+2.34
102	-2.90	+0.67	+2.23
103	-2.62	-0.09	+2.71

Table 7.2 (Cont.)

Items	Thresholds		
	1	2	3
104*	-1.43	-1.49	+2.91
105	-1.58	-0.97	+2.54
106	-1.90	-0.31	+2.21
107	-2.93	-0.06	+2.99
108	-1.93	-0.64	+2.57
109	-2.70	-0.13	+2.83
110	-2.19	+1.26	+0.93
111	-2.21	+0.67	+1.54
112	-2.17	-0.22	+2.39
113	-1.80	-0.11	+1.91
114	-1.85	+0.07	+1.77

* indicates disordered threshold (seven items)

Individual Item-Fit Statistics

Individual item-fit statistics – locations, residuals and Chi-square probability – were calculated for data from the 114-item survey (see Table 7.3). The item locations show the relative difficulty that students demonstrated in responding affirmatively to the items. This was measured in logits – the log odds of responding affirmatively. The residual is the difference between the expected estimate and the actual values for each person-item summed over all items for each participant and summed over all participants for each item (see Styles & Andrich, 1993, p. 914 or Andrich & van Schoubroeck, 1989, p.482 for the equations). When the data fit the measurement model, the fit statistics approximate a distribution with a mean near zero and a standard deviation near one. Negative values indicate a response pattern that fits the model too closely (probably because response dependencies are present; see Andrich, 1985) and positive values indicate a poor fit to the model (probably because other measures – 'noise' – are present). While residuals outside of ±0.75 are seen as unexpected (Bond & Fox, 2001), a limit of ±2.0 has been applied in previous learning environment instrument construction (see Waugh & Cavanagh, 2002). The Chi-square test shows how well data from an item fit the model. If the probability is less than 0.05, the divergence between the observed mean and the expected value is large relative to chance (RUMMLab, 2004).

Data from seven items were found to have high residual and/or low Chi-square probability values. These were items 17, 43, 56, 57, 61, 78, and 79.

Table 7.3

Individual item-fit for the 114-item survey

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
001	+0.95	0.12	-0.13	104.03	108	0.17	0.92	2
002	+1.11	0.13	-0.02	104.03	108	0.78	0.68	2
003	-0.09	0.15	+0.17	104.03	108	2.63	0.27	2
004	+0.53	0.13	-0.07	104.03	108	1.34	0.51	2
005	-0.31	0.14	-0.05	104.03	108	0.22	0.90	2
006	-0.06	0.16	+0.24	104.03	108	0.75	0.69	2
007	+0.19	0.13	-0.14	104.03	108	0.56	0.76	2
008	+0.34	0.13	-0.14	104.03	108	0.72	0.70	2
009	+0.42	0.13	+0.03	103.07	107	0.20	0.90	2
010	+0.33	0.14	-0.15	104.03	108	0.40	0.82	2
011	+0.54	0.14	-0.31	104.03	108	9.97	0.14	2
012	+0.91	0.15	-0.17	103.07	107	1.74	0.42	2
013	+0.12	0.13	-0.97	103.07	107	5.87	0.05	2
014	+0.62	0.13	-0.63	104.03	108	3.38	0.18	2
015	+0.32	0.14	-0.63	104.03	108	3.47	0.18	2
016	+0.88	0.15	-0.67	104.03	108	2.28	0.32	2
017*	-0.25	0.14	-0.90	103.07	107	10.92	0.00	2
018	+0.45	0.14	-0.28	103.07	107	2.03	0.36	2
019	+0.21	0.15	-0.15	103.07	107	2.10	0.35	2
020	-0.01	0.13	-0.84	103.07	107	5.22	0.07	2
021	+0.01	0.12	-0.70	103.07	107	4.17	0.12	2
022	+0.01	0.14	-0.15	103.07	107	0.20	0.91	2
023	-0.08	0.14	-0.34	103.07	107	3.35	0.19	2
024	+0.39	0.15	-0.25	102.11	106	1.45	0.49	2
025	+0.00	0.14	+0.06	102.11	106	0.23	0.89	2
026	+0.07	0.14	+0.70	103.07	107	1.57	0.46	2
027	+0.08	0.16	+0.31	103.07	107	3.29	0.19	2
028	+0.05	0.14	-0.33	103.07	107	3.76	0.15	2
029	+0.26	0.14	-0.47	103.07	107	2.83	0.24	2
030	-0.19	0.15	+0.10	102.11	106	0.41	0.81	2
031	-0.71	0.14	-0.68	103.07	107	0.66	0.72	2
032	-0.12	0.11	+0.37	103.07	107	1.55	0.46	2

Table 7.3 (Cont.)

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
033	+0.42	0.15	+0.04	103.07	107	1.09	0.58	2
034	-0.47	0.17	+0.14	103.07	107	0.99	0.61	2
035	-0.03	0.15	-0.10	103.07	107	1.20	0.55	2
036	-0.31	0.16	+0.06	103.07	107	4.63	0.10	2
037	+0.57	0.15	-0.52	103.07	107	2.95	0.23	2
038	+1.00	0.16	-0.36	103.07	107	0.14	0.93	2
039	+0.06	0.14	-0.35	103.07	107	3.39	0.18	2
040	+0.29	0.13	+0.56	103.07	107	2.39	0.30	2
041	+0.37	0.14	-0.90	102.11	106	5.08	0.08	2
042	+0.23	0.16	-0.37	104.03	108	7.55	0.02	2
043*	-0.34	0.15	-0.47	104.03	108	10.80	0.00*	2
044	-0.14	0.14	-0.45	104.03	108	5.27	0.07	2
045	+1.66	0.17	+0.06	104.03	108	1.62	0.45	2
046	+0.85	0.16	+0.57	104.03	108	4.63	0.10	2
047	-1.75	0.15	-0.72	103.07	107	1.36	0.51	2
048	+0.42	0.14	+0.46	103.07	107	3.13	0.21	2
049	+0.90	0.17	+0.50	103.07	107	4.74	0.09	2
050	-0.83	0.14	+0.17	104.03	108	0.66	0.72	2
051	+0.65	0.14	+0.63	103.07	107	1.53	0.47	2
052	+1.74	0.18	-0.08	103.07	107	1.78	0.41	2
053	-0.84	0.13	+0.30	104.03	108	1.74	0.42	2
054	-0.42	0.15	+0.40	104.03	108	0.06	0.97	2
055	+0.13	0.13	+0.38	104.03	108	0.78	0.68	2
056*	-0.15	0.12	+2.13*	104.03	108	22.77	0.00*	2
057*	+0.05	0.13	+1.54	104.03	108	24.48	0.00*	2
058	-1.69	0.16	-0.15	104.03	108	0.32	0.85	2
059	-0.61	0.15	+0.70	104.03	108	3.18	0.20	2
060	-0.30	0.16	+0.79	103.07	107	0.99	0.61	2
061*	+1.34	0.16	+0.24	104.03	108	9.50	0.01*	2
062	-1.02	0.14	+0.74	104.03	108	0.69	0.71	2
063	-1.09	0.16	+0.34	104.03	108	2.48	0.29	2
064	-1.91	0.17	-0.01	104.03	108	1.19	0.55	2
065	-1.03	0.14	+0.58	104.03	108	1.73	0.42	2
066	-1.19	0.16	-0.11	103.07	107	1.08	0.58	2
067	-1.18	0.17	-0.38	104.03	108	0.10	0.95	2
068	-0.69	0.16	+0.20	104.03	108	3.03	0.22	2
069	-0.55	0.15	+0.34	104.03	108	1.23	0.54	2

Table 7.3 (Cont.)

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
070	-1.06	0.16	-0.27	104.03	108	2.77	0.25	2
071	-1.41	0.17	+0.34	102.11	106	0.46	0.79	2
072	-1.39	0.17	+0.07	102.11	106	0.50	0.78	2
073	-0.55	0.15	+0.35	102.11	106	1.36	0.51	2
074	+0.74	0.15	+0.35	102.11	106	2.03	0.36	2
075	+0.63	0.16	-0.12	102.11	106	2.61	0.27	2
076	-0.65	0.17	+0.25	102.11	106	0.95	0.62	2
077	-0.74	0.17	-0.37	102.11	106	0.52	0.77	2
078*	-0.08	0.13	+0.96	102.11	106	10.53	0.01*	2
079*	+0.48	0.13	+0.62	102.11	106	6.92	0.03*	2
080	-0.20	0.14	+0.55	102.11	106	0.16	0.92	2
081	+1.23	0.15	+0.01	102.11	106	1.35	0.51	2
082	-0.05	0.13	+0.92	102.11	106	2.41	0.30	2
083	+0.37	0.14	+0.26	102.11	106	1.72	0.42	2
084	+0.49	0.16	-0.19	102.11	106	2.78	0.25	2
085	-0.60	0.18	+0.01	102.11	106	1.03	0.60	2
086	+0.52	0.15	+0.63	102.11	106	2.89	0.24	2
087	+0.52	0.15	+0.49	101.14	105	1.87	0.39	2
088	-0.03	0.15	+0.09	102.11	106	2.11	0.35	2
089	-0.19	0.16	+0.47	102.11	106	2.59	0.27	2
090	-0.25	0.16	+0.04	102.11	106	1.21	0.55	2
091	-0.08	0.14	+0.02	102.11	106	0.56	0.76	2
092	+0.16	0.16	+0.64	104.03	108	2.11	0.35	2
093	-0.40	0.18	-0.15	104.03	108	2.27	0.32	2
094	-0.49	0.16	+0.04	104.03	108	1.23	0.54	2
095	-0.43	0.16	-0.13	103.07	107	1.53	0.47	2
096	-0.16	0.15	+0.16	104.03	108	0.29	0.87	2
097	-0.72	0.15	+0.77	103.07	107	2.38	0.30	2
098	-0.42	0.16	+0.08	104.03	108	2.05	0.36	2
099	+0.42	0.17	+0.05	103.07	107	0.96	0.62	2
100	+0.74	0.17	+0.24	104.03	108	0.55	0.76	2
101	+0.91	0.19	+0.13	104.03	108	0.38	0.83	2
102	+0.17	0.16	-0.06	104.03	108	4.03	0.13	2
103	+0.60	0.16	+0.40	104.03	108	0.14	0.93	2
104	-0.60	0.20	+0.23	104.03	108	0.57	0.75	2
105	-1.01	0.18	-0.23	104.03	108	1.68	0.43	2
106	+0.17	0.14	+0.54	104.03	108	0.40	0.82	2

Table 7.3 (Cont.)

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
107	+1.80	0.17	-0.23	104.03	108	0.87	0.65	2
108	-0.60	0.16	-0.09	104.03	108	1.38	0.50	2
109	-0.74	0.17	+0.34	104.03	108	1.73	0.42	2
110	+0.42	0.15	+0.44	104.03	108	4.83	0.09	2
111	+0.33	0.14	+0.26	104.03	108	0.18	0.91	2
112	+0.76	0.14	+0.38	103.07	107	5.78	0.06	2
113	+0.18	0.13	+0.51	104.03	108	2.32	0.31	2
114	+0.05	0.13	+0.06	104.03	108	1.15	0.56	2

* indicates high residual and/or low Chi Square probability value (seven items)

The above table shows the results of the first iteration in a 16 step iterative process of deleting data from various misfitting items and the re-estimating individual item-fit statistics. Eventually, data from 19 items were deleted.

RUMM Analysis of 95-Item Survey Data

After 16 iterations of RUMM analyses and item deletion, the fit statistics from data for 95 items indicated that the 95 items were likely an objective measure of student attitudes comprising the trait under investigation.

Summary Test-of-Fit Statistics

Summary test-of-fit statistics were generated to determine the extent to which the 95-item data fits the Rasch model (see Table 8.1). The means of 0.00 and 0.09 are close to ideal, however the standard deviations of 0.68 and 0.44 illustrate variance in student and item data that is lower than what would be observed in ideal data-to-model fit. For item-trait interaction, the total Chi-square probability was 0.12. This result indicates that for these data, the scale was measuring a dominant and possibly unidimensional trait. The power of the test-of-fit statistic showed the overall fit between the data and the model was excellent with a separation index of 0.87. Overall these results show good data-to-model fit.

Table 8.1

Summary test-of-fit statistics for the refined survey (95 items)

	Items		Persons	
	Location	Fit Residual	Location	Fit Residual
Mean	0.00	0.11	0.09	-0.79
SD	0.68	0.41	0.44	3.47

Item-Person Interaction spans the Items and Persons columns above.

Item-Trait Interaction		Reliability Indices	
Total Item χ^2	213.04	Separation Index	0.87
Total Deg of Freedom	190.00	Cronbach Alpha	N/A
Total χ^2 Probability	0.12		

Power of Test-of-Fit
Power is EXCELLENT
[Based on Separation Index of 0.87]

Ordering of Thresholds

Centralised item thresholds for the 95-item data were calculated. The results of this appear in Table 8.2. The data from all the 95-items were shown to be exhibiting ordered thresholds.

Table 8.2

Item thresholds for the 95-item survey (centralised)

Item	Thresholds		
	1	2	3
001	-1.25	-0.36	+1.61
002	-1.00	+0.33	+0.67
003	-2.31	-0.28	+2.58
004	-1.54	+0.10	+1.44
005	-1.49	-0.46	+1.95
006	-2.16	-0.58	+2.74
007	-1.86	-0.45	+1.41
008	-1.57	-0.25	+1.82
009	-1.51	-0.26	+1.77
010	-2.11	-0.13	+2.24
011	-2.13	+0.03	+2.10

Table 8.2 (Cont.)

Item	Thresholds		
	1	2	3
012	-2.21	-0.13	+2.35
014	-1.81	-0.39	+2.20
015	-1.84	-0.60	+2.44
016	-2.32	-0.02	+2.34
019	-2.35	+0.21	+2.14
020	-1.47	-0.43	+1.89
021	-1.59	+0.26	+1.33
022	-1.63	-0.41	+2.04
023	-1.78	-0.27	+2.04
024	-2.14	-0.40	+2.53
025	-2.13	+0.20	+1.93
026	-1.99	+0.11	+1.88
027	-1.94	-0.78	+2.72
028	-2.13	-0.11	+2.24
029	-1.87	-0.29	+2.16
030	-1.82	-0.60	+2.42
032	-0.97	-0.03	+1.00
033	-2.32	-0.44	+2.76
034	-3.81	+0.42	+3.39
035	-2.08	-0.37	+2.45
036	-2.89	-0.05	+2.94
037	-2.47	+0.29	+2.19
038	-2.73	+0.09	+2.64
039	-1.76	-0.18	+1.93
040	-1.89	+0.19	+1.70
041	-1.85	+0.07	+1.78
042	-2.61	+0.03	+2.57
044	-1.64	-0.44	+2.08
046	-2.64	+0.28	+2.36
047	-2.35	+0.15	+2.19
048	-1.97	+0.48	+1.50
049	-2.49	+0.72	+1.77
050	-1.74	-0.05	+1.79
051	-2.04	+0.14	+1.91
053	-1.77	+0.08	+1.69
054	-2.44	+0.06	+2.37

Table 8.2 (Cont.)

Items	Thresholds		
	1	2	3
055	-1.47	-0.34	+1.80
058	-2.13	-0.18	+2.31
059	-1.90	-0.36	+2.26
060	-2.25	-0.33	+2.58
062	-0.96	-0.56	+1.51
063	-1.51	-0.57	+2.08
064	-1.17	-0.82	+1.99
065	-1.29	-0.28	+1.57
068	-2.18	-0.28	+2.45
069	-1.98	-0.27	+2.25
071	-3.43	+0.33	+3.09
072	-3.66	+0.45	+3.21
073	-1.40	-0.75	+2.14
074	-2.44	+0.18	+2.06
075	-2.37	+0.67	+1.70
076	-2.74	-0.29	+3.03
077	-1.46	-0.88	+2.34
079	-1.68	+0.18	+1.50
080	-2.15	+0.07	+2.08
081	-1.99	+0.43	+1.56
082	-1.95	+0.21	+1.74
083	-2.09	+0.29	+1.79
084	-2.57	+0.80	+1.78
086	-2.31	-0.02	+2.34
087	-2.17	-0.06	+2.23
088	-2.24	+0.01	+2.23
089	-2.24	-0.33	+2.57
090	-2.12	-0.49	+2.61
091	-1.93	+0.14	+1.79
092	-2.72	+0.00	+2.72
093	-3.54	+0.10	+3.44
095	-2.74	+0.07	+2.68
096	-2.36	+0.10	+2.26
097	-3.05	+0.47	+2.58
098	-2.92	+0.15	+2.77
099	-2.81	+0.73	+2.07

Table 8.2 (Cont.)

Items	Thresholds		
	1	2	3
100	-3.21	+0.16	+3.05
101	-3.11	+0.76	+2.35
102	-2.91	+0.68	+2.22
103	-2.65	-0.08	+2.73
105	-1.57	-0.98	+2.55
106	-1.92	-2.94	+2.22
107	-2.96	-0.04	+3.00
108	-1.95	-0.64	+2.59
109	-2.73	-0.13	+2.86
111	-2.22	+0.69	+1.54
112	-2.18	-0.22	+2.40
113	-1.81	-0.11	+1.92

Individual Item-Fit Statistics

For these data, item locations ranged from -1.91 to 1.8, all but two Chi-square values are high ($p < 0.05$), and all residuals were lower than ± 2.0. This illustrates that the fit of the data from individual items to the model was good (see Table 8.3).

Table 8.3

Individual item-fit for the refined survey (95-items)

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
001	+0.95	0.12	+0.10	103.84	108	0.05	0.97	2
002	+1.11	0.13	-0.16	103.84	108	0.60	0.74	2
003	-0.10	0.15	+0.18	103.84	108	2.31	0.32	2
004	+0.53	0.13	-0.02	103.84	108	0.31	0.85	2
005	-0.32	0.14	+0.04	103.84	108	0.16	0.92	2
006	-0.07	0.16	+0.24	103.84	108	0.15	0.93	2
007	+0.19	0.13	-0.11	103.84	108	1.29	0.52	2
008	+0.33	0.13	-0.07	103.84	108	0.41	0.82	2
009	+0.42	0.13	+0.04	102.88	107	1.18	0.55	2
010	+0.33	0.14	-0.08	103.84	108	0.79	0.67	2
011	+0.53	0.14	-0.26	103.84	108	3.56	0.17	2

Table 8.3 (Cont.)

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
012	+0.90	0.15	-0.20	102.88	107	0.91	0.63	2
014	+0.62	0.14	-0.57	103.84	108	2.32	0.31	2
015	+0.30	0.14	-0.61	103.84	108	3.16	0.21	2
016	+0.88	0.15	-0.71	103.84	108	3.86	0.15	2
019	+0.20	0.15	-0.01	102.88	107	3.33	0.19	2
020	-0.01	0.13	-0.72	102.88	107	4.15	0.13	2
021	+0.00	0.12	-0.57	102.88	107	5.91	0.05	2
022	+0.01	0.14	+0.07	102.88	107	1.11	0.57	2
023	-0.08	0.14	-0.31	102.88	107	1.31	0.52	2
024	+0.38	0.15	-0.21	101.92	106	1.60	0.45	2
025	-0.01	0.14	+0.14	101.92	106	0.59	0.74	2
026	+0.05	0.14	+0.80	102.88	107	2.72	0.26	2
027	+0.06	0.16	+0.39	102.88	107	3.30	0.19	2
028	+0.04	0.15	-0.28	102.88	107	1.72	0.42	2
029	+0.25	0.14	-0.51	102.88	107	3.52	0.17	2
030	-0.20	0.15	+0.22	101.92	106	1.43	0.49	2
032	-0.12	0.11	+0.47	102.88	107	0.84	0.66	2
033	+0.41	0.15	+0.02	102.88	107	2.61	0.27	2
034	-0.49	0.17	+0.12	102.88	107	1.10	0.58	2
035	-0.04	0.15	-0.16	102.88	107	1.12	0.57	2
036	-0.32	0.17	+0.02	102.88	107	5.18	0.07	2
037	+0.56	0.16	-0.54	102.88	107	3.29	0.19	2
038	+0.99	0.16	-0.35	102.88	107	0.22	0.89	2
039	+0.05	0.14	-0.34	102.88	107	2.02	0.36	2
040	+0.28	0.14	-0.56	102.88	107	1.74	0.42	2
041	+0.37	0.14	-0.91	101.92	106	5.72	0.06	2
042	+0.22	0.16	-0.35	103.84	108	4.22	0.12	2
044	-0.15	0.14	-0.50	103.84	108	5.79	0.06	2
046	+0.86	0.16	+0.62	103.84	108	4.17	0.12	2
047	-1.75	0.15	-0.52	102.88	107	6.71	0.03	2
048	+0.41	0.14	+0.53	102.88	107	3.81	0.15	2
049	+0.88	0.17	+0.54	102.88	107	5.25	0.07	2
050	-0.83	0.14	+0.35	103.84	108	1.67	0.43	2
051	+0.65	0.14	+0.67	102.88	107	1.80	0.41	2
053	-0.84	0.13	+0.51	103.84	108	2.30	0.32	2
054	-0.43	0.15	+0.46	103.84	108	0.88	0.65	2
055	+0.12	0.13	+0.38	103.84	108	3.74	0.15	2

Table 8.3 (Cont.)

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
058	-1.70	0.16	-0.09	103.84	108	2.35	0.31	2
059	-0.62	0.15	+0.80	103.84	108	6.13	0.05	2
060	-0.31	0.16	+0.79	102.88	107	0.79	0.67	2
062	-1.04	0.14	+0.89	103.84	108	3.31	0.19	2
063	-1.11	0.16	+0.44	103.84	108	5.68	0.06	2
064	-1.91	0.17	+0.16	103.84	108	8.31	0.02	2
065	-1.04	0.14	+0.81	103.84	108	4.80	0.09	2
068	-0.71	0.16	+0.19	103.84	108	0.72	0.70	2
069	-0.56	0.15	+0.39	103.84	108	0.72	0.70	2
071	-1.40	0.17	+0.50	101.92	106	1.15	0.56	2
072	-1.40	0.17	+0.14	101.92	106	0.55	0.76	2
073	-0.55	0.15	+0.44	101.92	106	2.89	0.24	2
074	+0.72	0.15	+0.46	101.92	106	1.88	0.39	2
075	+0.63	0.16	-0.09	101.92	106	1.24	0.54	2
076	-0.67	0.18	+0.26	101.92	106	1.98	0.37	2
077	-0.76	0.17	-0.33	101.92	106	0.08	0.96	2
079	+0.47	0.13	+0.54	101.92	106	5.31	0.07	2
080	-0.21	0.14	+0.54	101.92	106	0.01	0.99	2
081	+1.24	0.15	-0.05	101.92	106	1.14	0.57	2
082	-0.06	0.14	+0.95	101.92	106	4.65	0.10	2
083	+0.37	0.14	+0.24	101.92	106	0.97	0.62	2
084	+0.49	0.16	-0.19	101.92	106	2.46	0.29	2
086	+0.52	0.15	+0.55	101.92	106	2.89	0.24	2
087	+0.51	0.15	+0.47	100.96	105	0.50	0.78	2
088	-0.04	0.15	+0.02	101.92	106	0.08	0.96	2
089	-0.20	0.16	+0.42	101.92	106	1.91	0.38	2
090	-0.26	0.16	-0.04	101.92	106	0.33	0.85	2
091	-0.09	0.14	+0.05	101.92	106	0.34	0.85	2
092	+0.15	0.16	+0.70	103.84	108	2.13	0.34	2
093	-0.41	0.18	-0.09	103.84	108	1.51	0.47	2
095	-0.45	0.16	-0.11	102.88	107	1.56	0.46	2
096	-0.17	0.15	+0.18	103.84	108	0.66	0.72	2
097	-0.73	0.15	+0.76	102.88	107	3.33	0.19	2
098	-0.43	0.16	+0.02	103.84	108	2.17	0.34	2
099	+0.42	0.17	+0.02	102.88	107	0.13	0.94	2
100	+0.72	0.17	+0.30	103.84	108	0.55	0.76	2
101	+0.91	0.19	+0.18	103.84	108	1.53	0.47	2

Table 8.3 (Cont.)

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
102	+0.16	0.16	+0.07	103.84	108	1.57	0.46	2
103	+0.60	0.16	+0.31	103.84	108	0.03	0.98	2
105	-1.02	0.18	-0.10	103.84	108	6.02	0.05	2
106	+0.16	0.14	+0.53	103.84	108	0.73	0.69	2
107	+1.80	0.17	-0.25	103.84	108	1.89	0.39	2
108	-0.61	0.17	-0.10	103.84	108	1.51	0.47	2
109	-0.75	0.17	+0.30	103.84	108	0.10	0.95	2
111	+0.32	0.14	+0.32	103.84	108	1.56	0.46	2
112	+0.75	0.15	+0.45	102.88	107	5.70	0.06	2
113	+0.17	0.13	+0.60	103.84	108	1.27	0.53	2

Item Map

To show the overall fit between persons and items, a RUMM item map (see Figure 4) was generated for the 95-item survey data. As can be seen, the distribution of person locations matched the distribution of item location very well, illustrating that the items 'targeted' the sample. All persons, and items, were located between +2.0 logits and -2.0 logits.

Location	Persons	Items [location]											
2.0													
		107											
	X												
	X	081											
1.0		002											
	XX	046	016	049	012	101	001	038					
	XX	014	075	051	074	100	112						
	XXXXX	048	033	099	009	079	084	087	086	004	011	037	103
	XXXXXXXXXXXXX	019	042	029	040	015	111	010	008	041	083	024	
0.0	XXXXXXXXXX	021	022	028	039	026	027	055	092	106	102	113	007
	XXXXXXXXXX	030	096	044	032	003	091	023	006	082	088	035	020	025
	XXXXXXXXX	005	036	060	090	080	089						
	XXXX	069	073	034	095	098	054	093					
	XX	077	109	097	068	076	059	108					
-1.0		053	050										
		063	062	065	105								
		072											
	X	071											
		047	058										
-2.0		064											

X = 2 persons

Figure 4: Person-item map for the refined survey (95-items)

Summary of the Survey Development and Refinement Process

The Rasch rating scale model was used to examine the data from the 114-item survey in order to refine the survey so that it was measuring a unidimensional trait of the respondents. In an iterative process 19 items that elicited data with disordered thresholds and/or poor fit to the model were discarded. These items were: 13, 17, 18, 31, 43, 45, 52, 56, 57, 61, 66, 67, 70, 78, 85, 94, 104, 110, and 114. The data from the remaining 95 items were considered interval and thus amenable to further analyses such as tests of correlation and multiple regression.

2. Test Refinement

RUMM Analysis of 40-item Test Data

Summary Test-of-Fit Statistics

To verify fit of the 40-item test data to the Rasch model, summary test-of-fit statistics were determined (see Table 9.1). Since the test was used before and after the intervention and needed to measure both pre and post-intervention ability, data from both administrations were used for test refinement. The means of 0.00 and -1.21 show many of the items were too hard for the students. The standard deviations of 1.47 and 1.09 show that the variance of item difficulty data was larger than in an ideal data-to-model fit. The total Chi-square probability was 0.00, suggesting that the items were not eliciting data on a unidimensional trait of the students. The power of the test-of-fit statistic showed the overall fit between the data and the model was good with a separation index of 0.83. In summary, it was likely that the instrument could be improved.

Table 9.1

Summary test-of-fit statistics for the 40-item test

	Item-Person Interaction				
	Items			Persons	
	Location	Fit Residual		Location	Fit Residual
Mean	0.00	0.04		-1.21	-0.16
SD	1.47	1.59		1.09	0.88

Item-Trait Interaction		Reliability Indices	
Total Item χ^2	207.55	Separation Index	0.83
Total Deg of Freedom	80.00	Cronbach Alpha	0.84
Total χ^2 Probability	0.00		

Power of Test-of-Fit
Power is GOOD
[Based on Sepaeation Index of 0.83]

Individual Item Fit Statistics

Individual item-fit statistics for the 40-item test data were calculated and presented in Table 9.2. For these items, item locations ranged from -3.18 to 2.96. Seven items were then identified as eliciting misfitting data - items 4, 20, 22, 34, 35, 36, and 38. Data from these seven items had high residuals ($<\pm 2.0$) and/or low Chi Square Probability values ($p < 0.05$). These items were then removed leaving a 33-item refined test.

Table 9.2

Individual item fit for the 40-item test data

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
01	+0.79	0.20	+0.06	208.65	215	0.99	0.61	2
02	+2.45	0.36	-0.50	208.65	215	0.60	0.74	2
03	+2.37	0.35	-0.09	208.65	215	0.51	0.77	2
04*	-0.74	0.15	+4.22*	208.65	215	17.99	0.00*	2
05	+0.04	0.17	-0.61	208.65	215	1.51	0.47	2
06	-0.84	0.15	-2.20	208.65	215	3.92	0.14	2
07	+0.82	0.20	-1.43	208.65	215	5.32	0.07	2

Table 9.2 (Cont.)

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
08	+0.70	0.19	+0.18	208.65	215	0.62	0.73	2
09	+0.02	0.17	+0.21	208.65	215	0.73	0.70	2
10	+0.64	0.19	-0.93	208.65	215	1.52	0.47	2
11	-0.55	0.16	+0.95	208.65	215	2.94	0.23	2
12	+0.53	0.18	-0.12	208.65	215	0.16	0.92	2
13	-2.26	0.17	-1.28	208.65	215	7.93	0.02	2
14	+0.75	0.19	+1.71	208.65	215	7.55	0.02	2
15	+1.42	0.24	-1.25	208.65	215	4.38	0.11	2
16	-0.83	0.15	-2.12	208.65	215	5.81	0.05	2
17	-0.43	0.16	-0.61	208.65	215	4.52	0.10	2
18	+1.08	0.21	+1.41	208.65	215	9.01	0.01	2
19	+2.86	0.43	-0.70	208.65	215	0.84	0.66	2
20*	-2.59	0.18	-0.35	208.65	215	11.15	0.00*	2
21	+1.07	0.21	-0.43	208.65	215	1.37	0.50	2
22*	-0.31	0.16	+3.29*	208.65	215	34.59	0.00*	2
23	+2.96	0.45	-0.58	208.65	215	2.28	0.32	2
24	+0.31	0.18	+0.20	208.65	215	1.12	0.57	2
25	-0.96	0.15	-0.48	208.65	215	0.87	0.65	2
26	-1.24	0.15	+2.00	208.65	215	1.83	0.40	2
27	+0.17	0.17	+1.43	208.65	215	6.13	0.05	2
28	+0.12	0.17	+1.66	208.65	215	2.34	0.31	2
29	-1.89	0.16	-1.62	208.65	215	2.12	0.35	2
30	-0.79	0.15	+1.61	208.65	215	4.53	0.10	2
31	+1.41	0.24	+1.12	208.65	215	4.64	0.10	2
32	-0.51	0.16	-1.99	208.65	215	3.31	0.19	2
33	+0.18	0.17	-0.34	208.65	215	1.19	0.55	2
34*	-1.51	0.16	-1.62	208.65	215	11.60	0.00*	2
35*	-1.51	0.16	-2.34*	208.65	215	11.19	0.00*	2
36*	-0.62	0.15	+3.91	208.65	215	12.91	0.00*	2
37	-0.91	0.15	+0.17	208.65	215	2.69	0.26	2
38*	-3.18	0.20	+0.98	208.65	215	9.00	0.01*	2
39	-1.50	0.15	-1.10	208.65	215	3.39	0.18	2
40	+2.51	0.37	-0.95	208.65	215	2.40	0.30	2

* indicates items with high residuals and/or low Chi Square probability values

RUMM Analysis of 33-item Test Data

Summary Test-of-Fit Statistics

Summary test-of-fit statistics for the 33-item test data are presented in Table 10.1. The means of 0.00 and -1.55 show many of the items were too easy for the students. The standard deviations of item difficulty and student ability of 1.35 and 1.20 show greater than ideal variance. The total Chi square probability was 0.00 suggesting the items were likely not eliciting data on a unidimensional trait of the students. The power of the test-of-fit was good with a separation index of 0.82. Interestingly, deletion of the seven items with poor individual data fit to the model did not improve the global fit statistics just presented. Similarly, deletion of more items failed to improve these statistics so the researcher assumed that the 33-item instrument was preferable to smaller instruments.

Table 10.1

Summary test-of-fit statistics for the 33-item test data

	Item-Person Interaction			
	Items		Persons	
	Location	Fit Residual	Location	Fit Residual
Mean	0.00	0.13	-1.55	-0.14
SD	1.35	1.42	1.20	0.79

Item-Trait Interaction		Reliability Indices	
Total Item χ^2	137.78	Separation Index	0.82
Total Deg of Freedom	68.00	Cronbach Alpha	0.81
Total χ^2 Probability	0.00		

Power of Test-of-Fit
Power is GOOD
[Based on Separation Index of 0.82]

Individual Item-Fit Statistics

Table 10.2 shows the results of determining individual item fit statistics for the 33-item test. Item locations for the data ranged from -2.59 to 2.71, and this shows that there was a wide range of difficulties within the items. Chi-square probability

values were all above 0.05, and all residuals but one were low ($< \pm 2.0$). These results show that the fit of the majority of the data to the model was good.

Table 10.2

Individual item-fit for the 33-item test

Item	Location	SE	Residual	DegF	DatPts	χ^2	Prob	degF
01	+0.52	0.20	+0.54	204.79	212	0.52	0.77	2
02	+2.20	0.36	-0.58	204.79	212	0.58	0.75	2
03	+2.11	0.35	-0.16	204.79	212	0.55	0.76	2
05	-0.25	0.17	-0.60	204.79	212	2.29	0.32	2
06	-1.14	0.15	-1.84	204.79	212	5.29	0.07	2
07	+0.51	0.20	-1.14	204.79	212	2.64	0.27	2
08	+0.41	0.19	+0.38	204.79	212	0.97	0.62	2
09	-0.27	0.17	+0.48	204.79	212	3.88	0.14	2
10	+0.37	0.19	-0.76	204.79	212	0.97	0.62	2
11	-0.84	0.16	+0.75	204.79	212	1.47	0.48	2
12	+0.24	0.19	-0.02	204.79	212	0.26	0.88	2
13	-2.59	0.17	-0.70	204.79	212	5.97	0.05	2
14	+0.48	0.20	+1.44	204.79	212	3.58	0.17	2
15	+1.15	0.24	-1.26	204.79	212	3.18	0.20	2
16	-1.17	0.15	-1.71	204.79	212	6.80	0.03	2
17	-0.73	0.16	-0.36	204.79	212	3.12	0.21	2
18	+0.80	0.22	+1.83	204.79	212	14.99	0.00	2
19	+2.57	0.43	-0.62	204.79	212	0.56	0.76	2
21	+0.80	0.22	-0.22	204.79	212	4.65	0.10	2
23	+2.71	0.46	-0.58	204.79	212	2.36	0.31	2
24	+0.04	0.18	+0.54	204.79	212	5.59	0.06	2
25	-1.25	0.15	-0.20	204.79	212	0.72	0.70	2
26	-1.53	0.16	+3.00	204.79	212	2.33	0.31	2
27	-0.10	0.17	+1.95	204.79	212	8.83	0.01	2
28	-0.16	0.17	+1.77	204.79	212	3.00	0.22	2
29	-2.23	0.16	-1.89	204.79	212	4.04	0.13	2
30	-1.07	0.16	+1.84	204.79	212	5.31	0.07	2
31	+1.14	0.24	+1.23	204.79	212	5.81	0.05	2
32	-0.82	0.16	-1.69	204.79	212	8.89	0.01	2
33	-0.12	0.17	-0.45	204.79	212	2.40	0.30	2
37	-1.21	0.15	+0.81	204.79	212	0.66	0.72	2
39	-1.80	0.16	-0.64	204.79	212	4.49	0.11	2
40	+2.23	0.37	-1.02	204.79	212	2.46	0.29	2

Item Map

A RUMM item map was created for the 33-item test so that the overall fit between person and item data could be established (see Figure 5). As can be seen, the person locations were lower than the item locations. Persons were located within a range of -6.0 to 1.0, and items within the range of -3.0 to 3.0. This highlights that the test was difficult for these students.

Summary of Test Refinement Process

The process applied to refine the test was similar to that used to refine the survey. The refined test comprised 33 items. Each item elicited data with good fit to the model and the overall fit statistics were acceptable. While better fit statistics might have been desirable, this would have required writing new items and have caused a major delay in the progress of the research as well as presenting logistical problems associated with more data collection in Korea.

3. Associations between 95-item Survey Data and Pre-treatment Test Data

To determine if test performance was dependent on the variables measured by the survey, a multiple regression analysis was undertaken. First, both pre-test student ability logits were correlated with survey dimensions which concerned dispositions towards computer assisted learning of English as a foreign language (see the correlation matrix in Table 11). Since the logits had both negative and positive values, all the logits were converted into positive values by addition to each of the absolute value of the lowest logit. In this way, the intervality of the scale was maintained but the lowest logit (the logit for the student with the lowest ability) was 0.00. Next, a regression analysis was performed with test logits treated as the dependent variable and the survey elements as independent variables (see Table 12.1 and Table 12.2).

Location	Persons		Items [uncentralised thresholds]			
3.0						
			23			
			19			
			40			
2.0			03	02		
1.0			31	15		
			18			
	XX		21			
	X		08	14	07	01
	XX		12	10		
0.0	XXX		24			
	XXXX		28	33	27	
	XXXXX		09	05		
	XXXXXX					
	XXXX		17			
-1.0	XXXXXXXXXXX		11	32		
	XXXXXXXXXXXXXXXXXX		16	06	30	
	XXXXXXXXX		25	37		
	XXXXXX		26			
	XXXX					
-2.0			39			
	XXXXXXX					
	XXXX		29			
	XXXXX		13			
-3.0	XXXXXXXXXXX					
	XXXXX					
-4.0						
	XXXX					
-5.0						
	XX					
-6.0						

X = 2 persons

Figure 5: Person-item map for the 33-item test

Table 11

Pearson correlation of independent variables with the dependent variable (n = 108)

Independent Variables	Correlation (r)
A1. COMPUTER COMPETENCY	
(a) CAI usage	-0.04
1 I use online learning	0.04
2 I use disk-based (CD/DVD) learning	-0.12
(b) Skill level	-0.11
3 I am competent in using computers	-0.12
4 I am satisfied with my computer skills	-0.07
A2. PREFERENCE FOR COMPUTER-BASED LEARNING	
(a) CAI usage	-0.01
5 Computer technology should be used in my university classes	-0.05
6 Computer technology should be used for university class homework	-0.13
(b) Collaboration	-0.18
7 I like to work on my own with computers in class	-0.14
8 I like to work in pairs with computers in class	-0.12
9 I like to work in groups with computers in class	-0.24*
10 I like to work on my own with computers outside class	-0.14
11 I like to work in pairs with computers outside class	-0.13
12 I like to work in groups with computers outside class	-0.07
A3. PREFERENCE FOR LEARNING ENGLISH THROUGH CAI	
(a) CAI EFL activities	-0.03
14 I like to use practice tests (TOEFL / TOEIC / TEPS) when studying English with computers	0.06
15 I like to use set syllabus modules when studying English with computers	0.06
16 I like to use grammar exercises when studying English with computers	0.00
19 I like to use cloze exercises when studying English with computers	0.10
20 I like to use matching exercises when studying English with computers	0.09

Table 11 (Cont.)

	Independent Variables	Correlation (r)
21	I like to use writing/typing tasks when studying English with computers	-0.10
22	I like to use crossword puzzles when studying English with computers	0.22*
23	I like to use pronunciation activities when studying English with computers	0.00
24	I like to use translation tasks when studying English with computers	0.03
25	I like to use test style exercises when studying English with computers	0.07
26	I like to use multiple-choice questions when studying English with computers	0.06
27	I like to use true/false questions when studying English with computers	-0.03
28	I like to use question and answer tasks when studying English with computers	0.11
29	I like to use clue/guessing activities when studying English with computers	-0.10
30	I like to use word search puzzles when studying English with computers	0.01
32	I like to use colour coding activities when studying English with computers	0.00
33	I like to use reorganization activities when studying English with computers	0.12
34	I like to use semantic identification tasks when studying English with computers	-0.17
35	I like to use negotiation exchange tasks when studying English with computers	-0.21*
36	I like to use mnemonics/keyword tasks when studying English with computers	-0.22*
37	I think computers can help me improve my English reading skills	-0.16
38	I think computers can help me improve my English writing skills	-0.03
39	I think computers can help me improve my English listening skills	-0.06
40	I think computers can help me improve my English speaking skills	-0.11

Table 11 (Cont.)

Independent Variables	Correlation (r)
41 I want to use computers to study English	-0.10
(b) CAI EFL software preferences	-0.15
42 Using CD / DVD software is an effective way to learn English	-0.19*
44 Learning English with computers is improved when combined with the use of a paper-based workbook	-0.12
46 English language learning software instructions should include only instructions in Korean	-0.14
47 English language learning software instructions should include both English and Korean instructions	-0.04
48 English language learning software menu bars should include only English	0.06
49 English language learning software menu bars should include only Korean	-0.07
50 English language learning software menu bars should include both English and Korean	-0.07
51 English language learning software program icons should include only English	0.08
53 English language learning software program icons should include both English and Korean	-0.13
B1. IN-CLASS RELATIONS	-0.08
54 I like to learn with a partner	-0.08
55 I like to learn with a group	-0.06
B2. DESIRED CHARACTERISTICS OF INSTRUCTORS	0.05
58 Teachers should know about the subject they teach	0.03
59 Teachers should direct the classes	-0.04
60 The teacher is responsible for student's performance	0.12
B3. VIEW OF EDUCATION	0.04
62 Class exams are important	-0.00
63 Memorizing knowledge is important	-0.11
64 Practicing skills is important	0.02
65 Education is a way to achieve higher social status	0.20*

Table 11 (Cont.)

Independent Variables	Correlation (r)
C1. PREFERENCE FOR CULTURAL REPRESENTATION IN EFL LEARNING MATERIAL	0.19
68 Seeing Korean culture in English language learning materials gains my interest	0.18
69 English language learning material should have more Korean cultural content	0.15
C2. LOANWORD USE	0.00
71 It was easy for me to learn to use the English equivalents of pseudo loanwords (For example, *close physical contact between friends* for *skinship*)	0.01
72 It was easy for me to learn to use the English equivalents of hybrid Korean-English terms (For example, *cherry tomato* for *bangul-tomato*)	-0.06
73 It was easy for me to learn to use the English equivalents of truncated loanwords (For example, *remote control* for *remocon*).	0.06
C3. VOCABULARY ACQUISITION STRATEGIES	
(a) Meaning Discovery Strategies	
(i) Analyzing meaning	0.02
74 To discover the meaning of unknown English vocabulary, I analyze parts of speech	-0.02
75 To discover the meaning of unknown English vocabulary, I analyze affixes and roots	0.02
76 To discover the meaning of unknown English vocabulary, I analyze pictures or gestures	-0.10
77 To discover the meaning of unknown English vocabulary, I guess meaning from context	0.12
(ii) Using aids	-0.13
79 To discover the meaning of unknown English vocabulary, I use a monolingual dictionary	-0.03
80 To discover the meaning of unknown English vocabulary, I use word lists	0.01
81 To discover the meaning of unknown English vocabulary, I use flash cards	-0.25*
(iii) Help from others	-0.19
82 To discover the meaning of unknown English vocabulary, I ask the teacher for the meaning	-0.16

Table 11 (Cont.)

Independent Variables	Correlation (r)
83 To discover the meaning of unknown English vocabulary, I ask the teacher for a synonym of the word	-0.13
84 To discover the meaning of unknown English vocabulary, I ask the teacher for a sentence containing the word	-0.02
86 To discover the meaning of unknown English vocabulary, I use group activities to discover the meaning of a new English word	-0.21*
(b) Meaning Consolidation Strategies	
(i) Social Strategy	-0.25**
87 I remember the meaning of English vocabulary by using the vocabulary with a group of classmates	-0.24*
88 I remember the meaning of English vocabulary by using the vocabulary in conversation with a native English speaker	-0.16
(ii) Memory Strategy	-0.09
89 I remember the meaning of English vocabulary by drawing a pictorial representation of it	-0.22*
90 I remember the meaning of English vocabulary by connecting the vocabulary to a personal experience	0.05
91 I remember the meaning of English vocabulary by connecting the vocabulary to its synonyms and antonyms	-0.07
92 I remember the meaning of English vocabulary by grouping the vocabulary with similar words	-0.03
93 I remember the meaning of English vocabulary by using the vocabulary in a sentence	-0.01
95 I remember the meaning of English vocabulary by listening to the sound of the vocabulary	-0.00
96 I remember the meaning of English vocabulary by speaking the vocabulary aloud	0.06
97 I remember the meaning of English vocabulary by imagining the word forms for the vocabulary	-0.02
98 I remember the meaning of English vocabulary by using keywords	-0.30**
99 I remember the meaning of English vocabulary by remembering the word's affixes and roots	0.05
100 I remember the meaning of English vocabulary by remembering each word's part of speech	0.04
101 I remember the meaning of English vocabulary by paraphrasing the meaning of the vocabulary	-0.16

Table 11 (Cont.)

	Independent Variables	Correlation (r)
102	I learn the words of an idiom together to remember English vocabulary	0.00
103	I practice words using physical actions to remember English vocabulary	-0.04
(iii) Cognitive Strategy		-0.13
105	I write words repeatedly to remember English vocabulary	-0.03
106	I practice words using word lists to remember English vocabulary	-0.11
107	I practice words using flash cards to remember English vocabulary	-0.27**
108	I study words by taking notes in class to remember English vocabulary	-0.11
109	I utilize vocabulary sections in textbooks to remember English vocabulary	0.03
111	I keep a vocabulary notebook to remember English vocabulary	0.07
(iv) Metacognitive Strategy		-0.05
112	I use English-language media to remember English vocabulary	-0.10
113	I self-test word knowledge to remember English vocabulary	0.02

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

The lack of moderate or strong statistically significant correlation coefficients in Table 11 suggests that the correlational analysis has not revealed associations between survey items and dispositions towards computer assisted learning of English as a foreign language variables.

Regression Analysis: Survey Variables (independent variables) and Pre-test Logits (dependent variable)

The regression analysis model summary, presented in table 12.1, shows that when 18 independent variables were entered into the prediction model, multiple R was 0.44 and R^2 was 0.19. This shows that 19% of the variance of the dependent variable (test logits) can be cumulatively predicted by the 18 independent variables.

Table 12.1
Model Summary

R	R^2	Adjusted R^2	Std. Error of the Estimate
0.44(a)	0.19	0.03	0.83

a Predictors: (Constant), C3(b)(iv), A2(b), B2, C3(a)(ii), A1(b), C3(a)(i), C3(b)(i), C2, A1(a), A2(a), C1, A3(b), B3, C3(b)(iii), B1, A3(a), C3(a)(iii), C3(b)(ii)

In examining the coefficients, see Table 12.2, it can be seen that only one independent variable (C1) accounted for a statistically significant ($t = 2.22$, $p = 0.03$) variation in the dependent variable (test logits). In this case, when there was a unit positive change in preference for cultural representation in EFL learning material, then student test performance increased 0.24. Since relations between the other 17 independent variables and the dependent variable were not confirmed by either the correlational analysis or the regression analysis, the results of these analyses do not support a positive response to the first research question.

4. Analysis of Variance Comparison of Pre-treatment and Post-treatment Test Data

An item-by-item one-way analysis of variance was conducted to compare student performance on the pre- and post-test calibrated scores for each of the 33 items. Since the treatment comprised either of two CD-ROM instructional modules, the analysis was conducted twice. The analyses were performed by RUMM which has provision for ANOVA as part of a test for differential item functioning. Table 13.1 shows the *F*-Ratio and probability value from the RUMM ANOVA output for each item for the first treatment group and Table 13.2 for the second treatment group.

For the first treatment group (CD 1 users), the students performed at a statistically significant higher level in the post-treatment test than in the pre-treatment test for only one item (Item 39). For the second treatment group (CD 2 users) a statistically significant performance increase was shown for four items (Items 6, 13, 26, and 29). Given that the total number of items was 33, the increase in student performance on the test after the treatments was small. The increase was greater for the second treatment (CD 2). The ANOVA results do not provide strong support for a positive answer to the second research question which concerned the effect of application of computer assisted language learning strategies on student

understanding of pseudo-loanwords.

Table 12.2

*Coefficients (*a*)*

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	*β*	*T*	Sig.
(Constant)	3.86	1.34		2.88	0.01
A1(a)	0.00	0.06	0.01	0.05	0.96
A1(b)	-0.11	0.07	-0.16	-1.47	0.15
A2(a)	-0.03	0.08	-0.04	-0.40	0.69
A2(b)	-0.04	0.03	-0.15	-1.18	0.24
A3(a)	0.02	0.01	0.17	1.42	0.16
A3(b)	-0.05	0.04	-0.16	-1.39	0.17
B1	-0.04	0.08	-0.06	-0.51	0.61
B2	-0.08	0.08	-0.12	-1.01	0.32
B3	0.01	0.05	0.02	0.20	0.84
C1	0.18	0.08	0.24	2.22	0.03*
C2	0.03	0.06	0.05	0.44	0.66
C3(a)(i)	0.01	0.03	0.03	0.33	0.74
C3(a)(ii)	-0.03	0.08	-0.05	-0.41	0.69
C3(a)(iii)	-0.04	0.05	-0.10	-0.79	0.43
C3(b)(i)	-0.16	0.10	-0.20	-1.64	0.11
C3(b)(ii)	0.02	0.03	0.07	0.59	0.56
C3(b)(iii)	-0.02	0.05	-0.05	-0.40	0.69
C3(b)(iv)	-0.06	0.08	-0.08	-0.77	0.45

a Dependent Variable: logit

* Indicates $p<0.05$

Table 13.1

Treatment group one RUMM ANOVA output for each item

	Test	
Item	*F*-Ratio	Prob
1	0.50	0.48
2	1.62	0.21
3	0.15	0.70
5	0.53	0.47
6	1.04	0.31
7	3.00	0.09
8	0.00	0.98
9	0.17	0.68
10	0.29	0.59
11	0.14	0.71
12	0.39	0.53
13	2.95	0.09
14	3.40	0.07
15	0.97	0.33
16	0.19	0.66
17	0.02	0.89
18	0.85	0.36
19	0.14	0.71
21	1.94	0.17
23	0.44	0.51
24	0.33	0.57
25	0.08	0.78
26	0.01	0.93
27	0.00	0.95
28	0.23	0.63
29	1.14	0.29
30	1.19	0.28
31	1.09	0.30
32	0.04	0.84
33	0.00	0.99
37	0.24	0.63
39	7.97	0.01*
40	0.06	0.80

* Indicates $p<0.05$

Table 13.2

Treatment group two RUMM ANOVA output for each item

Item	Test F-Ratio	Prob
1	0.39	0.53
2	1.18	0.28
3	0.18	0.67
5	1.51	0.22
6	8.65	0.00*
7	0.80	0.37
8	1.04	0.31
9	0.20	0.66
10	0.06	0.81
11	0.02	0.89
12	0.08	0.77
13	7.71	0.01*
14	2.61	0.11
15	0.07	0.79
16	0.63	0.43
17	1.33	0.25
18	3.41	0.07
19	0.69	0.41
21	0.07	0.79
23	0.42	0.52
24	1.92	0.17
25	0.08	0.78
26	4.00	0.05*
27	3.37	0.07
28	0.00	0.97
29	4.43	0.04*
30	0.33	0.57
31	0.02	0.90
32	1.62	0.21
33	1.48	0.23
37	0.51	0.48
39	1.44	0.23
40	1.95	0.17

* Indicates $p<0.05$

Summary

This chapter mainly presented the results of statistical tests used for instrument refinement and also for analysis to provide results pertinent to the two research questions. Emergent implications of the results will be presented in the following chapter in which the empirical findings are discussed.

CHAPTER FIVE
DISCUSSION OF FINDINGS

Overview

This chapter discusses the results of the empirical investigation. In doing so, the association of computer assisted learning of English with the learning of pseudo-loanwords is considered. The impact of instructional approaches on vocabulary acquisition is then examined, and aspects of loanword utilization for foreign language development taken into account. Finally, threats to the reliability and validity of the research are detailed.

Research Investigation

Research Question One

Is student understanding of pseudo-loanwords associated with dispositions towards computer assisted learning of English as a foreign language? Answering this question involved determining if an association existed between the method of presenting learning content to students (computer assisted instruction) and the learning content itself (pseudo-loanwords).

Primary Investigation: Computer Assisted Instruction and Learning in EFL

Summary of the Results

Results indicate that no correlation was revealed between the trait measured by the survey and the understanding of pseudo-loanwords, as represented by test data.

As such, the hypothesized relationship between survey variables and test performance was not proven.

Association of Computer Assisted Learning of English with the Learning of Pseudo-Loanwords

The trait, 'student attitude towards computer assisted instruction in EFL', consisted of three postulated dimensions of student attitudes. First: disposition towards computer assisted instruction (focusing on computer competency), preference for computer-based learning, and preferences for learning English through CAI (see Alessi & Trollip, 2001; Chapelle, 2001). Second: Korean learning style, comprising of in-class relations, desired characteristics of instructors, and view of education (as per Cortazzi, 1990; Eastmond, 2000; Hofstede, 1986; Joo, 1997; Min, et al, 2000; Park & Oxford, 1988; Windle, 2003). Third: English as a foreign language learning style, consisting of preference for cultural representation, loanword use, and vocabulary acquisition strategies (see Ahn, 2002; Finch & Hyun, 2000; Pak, 1999; Park, 2001).

The survey was refined so that the data is more closely aligned to the Rasch model. Even though the survey had to undergo some modification in order to more consistently measure the single trait desired, the items removed from the survey to achieve this were from all three constructs comprising the trait (i.e. seven items from disposition towards CAI, five from Korean learning style, and seven from EFL learning style). Hence, a consistent measure was developed – a unique and refined instrument for use in correlation.

Rasch model analysis results indicate that the survey measured the trait successfully. To determine if data on test performance was linked to data on the variables measured by the survey, a process of multiple regression was undertaken.

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Test logits were used as the dependent variable with survey dimensions and individual items as independent variables. The results obtained suggest that there were minimal correlation between data on the trait being measured by the survey (student attitude towards computer assisted learning in EFL) and data on the understanding of the lexical content used in the treatment and test instruments (pseudo-loanwords). Consequently, the hypothesized relationship between the survey variables and test performance was not proved.

As such, variables that exist outside of the 'attitude of students towards computer assisted learning in EFL' impacted upon the results obtained, and therefore computer use did not bias the results obtained through CALL use in treatment. Since correlation predicts, rather than explains, the second research question can assist in defining aspects and elements of what extraneous variables exist, and to determine why the treatment did not lead to learning gains as expected.

Research Question Two

Does the application of different computer assisted language learning instructional strategies affect student understanding of pseudo-loanwords? This question involves examination of two factors. The first factor, or primary investigation, concerns the impact of CALL instructional approaches on L2 vocabulary acquisition. The secondary investigation focuses on exploring the applicability of loanword utilization for foreign language development. Reflecting upon the results obtained, each will be discussed in turn.

Primary Investigation: Impact of Instructional Approaches on Vocabulary Acquisition

Summary of the Results

Results indicate that behaviourist-based restricted CALL versus communicative-based open CALL instructional approaches provide largely the same learning gains to Korean university freshmen. This is supported by consistency in the level of performance, although the communicative-based open CALL approach did see marginally higher learning gains. Such results may have resulted from the preexisting exposure that Korean students have had to both strategies in the EFL classroom, as evidenced by Jeong (2002, p. 251) who states, "there are two sharply different ways of learning English in Korea" – behaviourist and communicative. Traditionally, a behaviourist approach has been provided by Korean instructors in the grade school years, and a communicative approach provided by L1 speakers of English at the tertiary level but now also at the grade school level as a result of policy changes implemented by the Seventh National English Curricula. Results would then appear to indicate that as students become increasingly exposed to alternate strategies, the behaviourist focused Korean cultural learning style appears to change as students are able to adopt and utilize communicative strategies effectively. This lends support to the belief that learning styles and strategies can be taught, and it is the educational environment that moulds students to patterns of classroom behaviour and models of classroom expectations. This highlights a need for educators to reexamine the beliefs and stereotypes held about Korean learners, particularly when such learners are continually being grouped with Chinese and Japanese students as East Asian learners. In addition, research undertaken in one Asian nation is generalized as being true for the entire Asian context (see Finch, 2000; Liu & Littlewood, 1997; Rao, 2002).

Aside from this, students might have viewed the CALL systems as part of the university English program course, as desired, but this might have led to negative consequences. Students might have interpreted the material as 'homework to complete' rather than 'material to engage them in learning'. The impact of learner attitudes, and learner responses to homework use in the university English program might have then generated negative washback on the study. Although mechanisms were in place throughout the empirical investigation to prevent students from simply processing the CD material rather than practicing language with it, more controls might have been required. Such controls would take individual learner variables and aspects of Korean student self-efficacy, motivation, autonomy, and self-regulatory skills into account.

Consequences of the Changing Korean Cultural Learning Style

The local culture and learning context, constituting the Korean cultural learning style, was taken into account in the design of the two CALL modules employed in the treatment. The first of these instructional systems focused on behaviourist-based strategies via a restricted CALL approach. This is a result of the literature showing that Korean students hold a Confucian consciousness, and that their classroom expectations align with the behaviourist learning mode, which has long been favoured in the Korean classroom by Korean teachers as Niederhauser (1997) has observed. The first CALL module was therefore based on the cultural and classroom expectations of the learner, as presented by the literature and seen in current practice (refer to Ahn, 2002; Cortazzi, 1990; Eastmond, 2000; Finch & Hyun, 2000; Hofstede, 1986; Joo, 1997; Min, Kim & Jung, 2000; Pak, 1999; Park, 2001; Schmitt, 1997; Windle, 2003). This instructional strategy was contrasted with a communicative-based open CALL approach, a common instructional strategy in

contemporary systems, and one more akin to L1 English speaker learning content presentation, and the teaching style since advocated by the Seventh National English Curricula.

In terms of this research, the researcher expected that both instructional approaches would lead to significant learning gains, but that the behaviourist-based restricted CALL approach would provide higher learning gains over the other. That is, if cultural expectations of the learner and the learner strategies presented in the literature, and incorporated within the CALL systems, are truly indicative of the contemporary Korean learner. In an attempt to ascertain this, a greater amount of statistically significant change amongst items in the first treatment would have had to appear over those of the alternate treatment. In fact, results show the effect of both treatments to be low, but that the second treatment group (i.e. communicative-based open CALL users) faired slightly better than the first treatment group (behaviourist-based restricted CALL users). One item of the 40 showed a significant improvement for the behaviourist, and four items showed a significant improvement for the communicative group. This illustrates that the Korean cultural learning style, presented within behaviourist-based restricted (CD 1) and communicative-based open CALL (CD 2) vocabulary learning approaches revealed no real statistically significant learning gains with either instructional method when L1 data was used as the source for foreign language learning material.

This indicates that although cultural expectations of students might be at play in the classroom context, vis-a-vis both Korean and L1 English speaking instructors, these expectations might not transfer to the CALL instructional method and the student/computer context in an autonomous self-directed learning mode. Although this is an area for further research, it does lend support to the view that learning styles and strategies can be taught, and what has been measured cannot be attributed

to an overly generalized prescription for the 'way Asian learners are' but more the 'way Asian learners have been taught'. Educational contexts are more responsible for Asian learning styles than the learners themselves (Littlewood, 2000, p.33). This is supported by Reid (1987, p. 100), who postulated that learning styles are "moderately strong habits rather than intractable biological attributes," even though Dunn and Griggs (1988, p. 3) state: "Learning style is the biologically and developmentally imposed set of characteristics that make the same teaching method wonderful for some and terrific for others."

Nonetheless, it is believed that teaching method policy changes made to the Seventh National English Curricula (see J. T. Chang, 2003), toward that of a CLT focus, will see younger learners become more accustomed to the types of strategies central to communicative-based open CALL rather than being exposed to (what has previously been the case) a mix of approaches – behaviourist (in Korean teacher English language classrooms) and communicative (from the L1 speaker of English language classrooms). In fact, it is postulated that this past mix of exposure explains the similar levels obtained by the group of students in this study, since they are accustomed to both types of teaching strategies from within the classroom context. This reinforces the belief that implementation of changes to the national curriculum will promote a change in the development of the Korean cultural learning style, and as this develops and as results from this study would appear to indicate, a need to reexamine exactly what this notion entails is essential.

Taking the above into account, the results also imply that the Korean cultural learning style and classroom expectations, as evident in the literature (predominantly behaviourist) are changing (as hinted by Windle, 2003) to a more communicative orientation, for the current generation of Korean university freshman. Hence, culturally tailored CALL courseware systems based on current perspectives of

Korean culture may not be as effective as they could be, as this study's results would seem to indicate. The results also support the argument put forth by Kubota (2001) that the perception of dichotomous differences between Asian and Western learners and teaching contexts is questionable. This also highlights the danger in arguing, as Rao (2002) does, that East Asian students possess the same learning style – a Confucian behaviourist transmission model with focus on accuracy through a process of analysis. Others such as Terry (2002) would assert that Asian students like to learn in a variety of ways. As such, by providing a wide range of classroom activities that cater to different learning, teachers can help foreign language students develop beyond the comfort zone dictated by their natural preferences which, as Reid (1987) indicates is primarily visual for Korean learners.

It is also important to recognize that learners will also process input to a large degree through their own unique filters. As such, instead of following what Rao (2001) advocated – teachers adapting teaching methods to the way learners in particular communities learn, it is possible and may prove more beneficial to assist learners in developing a variety of learning strategies since "language learning styles and strategies are among the main factors that help determine how – and how well – our students learn a second or foreign language" (Oxford, 2003, p. 1).

Influence of Negative Washback

As a number of researchers indicate (see H. K. Choi, 2004; S. W. Lee, 2003; Schulz, 2001), learner perceptions and beliefs regarding a particular language learning activity can strongly influence the effectiveness of that activity in foreign language learning. In response, it is important to consider what has in the past been referred to as learner representations (Holec, 1987), and take into account the 'subjective reality' of the learner (Riley, 1997). 'Subjective reality' can be considered

an important stimulus for action since "what we believe we are doing, what we pay attention to, what we think is important, how we choose to behave, how we prefer to solve problems, form the basis for our personal decisions as to how to proceed" (McDonough, 1995, p. 9).

Although focusing on internet activity use in the EFL context with adult students enrolled in non-credit courses, as opposed to courseware systems, Oh (2003a, p. 157) discovered that when required as homework, "... most students were reluctant to use them … because they were 'lazy' or 'not ready to use the internet comfortably', or they didn't have 'strong will-power'." In a later follow up study, with primary school students Oh (2003b, p. 107) also found similar results, along with the opinion that computers were perceived primarily as an entertainment device:

> For them, 'computers are the place to be relaxed and to take a rest [and] not to be stressed'. So, when they were asked to do something on the computer in English as homework, they did the homework as quickly as possible not doing any extra works to learn English voluntarily.

This, as mentioned in Chapter Two (and supported by C. H. Lee, 2000; Y. J. Lee, 2000; Lee & Kastner, 1999; Lee & Pyo, 2002; and, Y. S. Jung, 2000) indicates that autonomous learning is lacking in Korean EFL students. However, if greater autonomy can be promoted then it appears that multimedia and internet use can lead learners to increased motivation, and provide students with not only a rich linguistic environment but also develop within them personal responsibility (C. J. Kwon, 2002). This also reiterates the need for students to be actively involved with learning from any CALL material they are required to use. Yet, as Lee and Pyo (2002, p. 78) indicate, this is problematic since

… First-year Korean university students are not ready nor prepared for this particular mode of learning. It is unfortunate to observe that most students show passive needs of teachers' direct guidance or control, feeling burdened for the responsibility given from autonomous learning.

Furthermore, Lee and Pyo indicate that Korean students exhibit a lack of learning responsibility if the system or teacher does not enforce it, and this emphasizes the need of having such checks in place as ensuring that students complete only their homework, and do not copy it from others. They also go so far as to suggest that not only do Korean students need to possess minimal levels of functional English and high levels of motivation, but they need to be purposely selected for participation in CALL, or more specifically, offline classes. "It is indispensable to choose a group of students who would maximize their learning opportunity through a screening process" (Lee & Pyo, 2002, p. 79), particularly when, as evidence suggests, Korean students with higher grades are more responsive to CAI (computer assisted instruction) while those with lower grades prefer traditional classroom lectures over CALL (W. K. Choi, 2002).

Even though low motivation and active involvement appear to be inherent problems for CALL–based learning initiatives in Korea, especially for compulsory courses such as Freshman English, in which the research subjects were enrolled, the same attitudes may not be found within English language and literature students utilizing such courseware. Although no comparative study examining this concept is available, it is well recognized that individual learner variables ranging from motivation and attitude through to anxiety and beliefs can significantly impact language learning (Brown, 2000; S. W. Lee, 2005), and this extends to the use of CALL. S. W. Lee shows us that learner belief studies suggest that individuals' beliefs could affect motivation levels and behaviour, as well as "reactions to certain

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instructional activities or methods" (S. W. Lee, 2005, p. 13). This is particularly true when:

> ... the computer program simply produces relatively fixed feedback. Because the feedback has already been pre-programmed in conjunction with the specific situation, learners will not expect to receive feedback resulting in extra-positive learning effects. Such inflexibility may dampen the learner's motivation as the computer software repeatedly parrots the same pattern of comments or replies (H. Lee, 2005, p. 208).

In addition, Stoney and Oliver (1999) warn that multimedia products allowing for student control and self-paced completion of activities can see students unsuccessfully manage the completion of learning tasks, and in this sense then, program attributes allowing for the development of cognitive engagement can in fact prove an impediment to learning. Similarly, in the view of Laurillard, et al. (2000, p. 2), that multimedia environments allow for learner control over navigational pathways can lead to a lack of a narrative line, which is only established "from an interactive collaboration between the user and the program." User selections may thereby result in learners engaged with multimedia material as perceiving the program to be something very different to the expectations of the author.

However, what multimedia environments inherently provide are multi-sensory experiences from the combination of various media types into a single medium, an heuristic environment that learners can control, and where there is flexibility in the distribution of learning content, with the same material delivered to students in either passive or active forms. Hick (1996) views this consistency as one of the benefits of employing multimedia with learners, and as such:

Teachers can therefore feel comfortable in using online resources as

homework assignments, since (in addition to saving valuable class time)

this allows students to acquire the required forms and functions at their

own speed, and to perform the activities however many times it takes

until successful cognition is achieved (Finch, 2004, p. 150).

Yet, results from the experiment indicate that perhaps higher learning gains

could have been promoted by integrating the CALL activities into the structure of the

classroom as, rather than "… being an add-on part of the program. … The active

involvement of the teacher, such as modelling the activities, in-class feedback or

follow-up quizzes, reinforces the effectiveness of CALL classes" (Lee & Yang, 2002,

pp.173–174). In such a manner, positive washback could have been promoted, and

perhaps also, aspects of self-regulatory skills could have been taught as part of the

course. Unfortunately, this would have been problematic in terms of the experiment

coming to infringe upon the existing university English program curriculum.

Nevertheless, the single-user design employed by the CALL modules did provide

students with the ability to complete work without supervision, and would have, to a

certain extent, seen them become more responsible for independent and autonomous

learning (Soper, 1997).

Ultimately though, Lynch (2003) recognizes that CALL can be detrimental

when students lack self-regulatory skills, and that there needs to be a shift in research

from hardware and software to 'humanware', by examining "… which strategies for

which learners using which technologies in which instructional contexts" (Lynch,

2003, p. 29). That being said, self-regulatory learners are proactive rather than

reactive; they motivate themselves, possess self-efficacy, seek assistance when

necessary, and modify their learning environment or move to a new one as required.

Unfortunately, the self-regulation level of participants in the current study is

unknown. However, one advantage of the homework modules is that they could be applied in any location and therefore allow learners to be proactive in choosing where they will study, allowing them the ability to exercise their "motivation and autonomy in ways conducive to personal learning choices" (Lynch, 2003, p. 37). Yet, this could also be considered a threat to the experiment, and is discussed in more detail later in this chapter. Continuing, Lynch (2003, p.33) draws our attention to Salomon who

> … found that learners who express a preference for instruction using media tend to expect that it will be a less demanding way to learn. This expectation results in lower investment of effort and lower achievement levels when compared to instructional conditions that are perceived as more demanding (e.g. traditional instruction).

This belief can also be related to technological bias, "the misconception that the use of technology intrinsically allows for greater human efficiency" (Lynch, 2003, p. 36). Although unmeasured, students using the CALL material could have believed they were gaining some value from their activities "even while procrastinating because of the incorrect belief that work was being accomplished" (Lynch, 2003, p. 36). So too, students believing that the use of technology would allow them greater efficiency in learning may have completed the activities quickly and in a rushed manner, as Oh (2003b) indicates young Korean learners are prone to do, particularly since students tend to believe that advanced technology is more effective pedagogically over other techniques (Bates, 1994).

Aside from the individual learner variables, and aspects ranging from low motivation, low self-efficacy, through to a lack of self-regulatory skills, the L1 learning content itself may have impacted the learning gains achieved through use of the CALL systems, seeing neither instructional strategy come to provide greatly

beneficial learning over the other. This aspect of loanword utilization for L2

development is the focus of the secondary investigation of this research question, and

will now be considered.

Secondary Investigation: Loanword Utilization for Target Language Development

Summary of the Results

Results indicate that the use of L1 vocabulary in the form of pseudo-loanwords to

promote learning and understanding in the target language does work within the

Korean CALL environment but with very marginal and limited success. This is in

contrast to reported successes in the use of loanwords in other contexts, such as non

CALL-based implementation of vocabulary acquisition with Japanese students (of

various ages) in ESL (America) and EFL (Japan) contexts. Despite such hopeful

reports of success for the use of direct loanwords elsewhere, in the Korean case,

learning and understanding may be inhibited due to aspects associated with the

nature of pseudo-loanword vocabulary items themselves, as well as such factors that,

for lack of more well-defined terminology in the literature (see Han, 2004a), could be

described as a 'stabilized interlanguage'.

Successful Application in Alternate Contexts Versus the Korean Context

Success in the application of loanwords for target language acquisition has

been seen in contexts outside of Korea, most notably with Japanese learners in both

EFL and ESL environments. Although researchers have postulated that loanwords

provide negative interference with Japanese students of English (see Sheperd, 1996;

Simon Maeda, 1995), positive transfer can be observed (refer to Brown, 1995; Brown & Williams, 1985; Daulton, 1998; Kimura, 1989; Yoshida, 1978). The latter group of studies provide support for the loanword approach in various contexts, although none of these are CALL-based.

In the Yoshida (1978) study, it was found that English loanwords assisted a Japanese speaking child in the learning of Standard American English while living and attending nursery school in America. Loanwords were helpful in the learning of English due to their similarity as cognates, enlarging receptive vocabulary recognition, and in the comprehension of new English vocabulary items. Kimura (1989) examined both the EFL and ESL contexts and found that student scores were better for English basewords than for non-basewords. Brown and Williams (1985), stating that "students may do better when they make the English association on their own" (p. 141), also found that Japanese college level EFL students were better able to define words that were borrowed into Japanese from English over words that were not. Brown (1995) also came to indicate that loanwords in Japanese constitute a latent vocabulary base, showing that a 'borrowed word recognition phenomenon' allows Japanese students to more easily identify and apply loanword terms over non-loanwords. So too, Daulton (1998) further confirms that Japanese college level EFL students were better able to recognize and recall basewords over non-basewords. This implies that loanwords, as a pre-existing lexical resource, can provide scaffolding, enhance vocabulary acquisition, and lighten the learning burden (Nation, 1990).

In comparison to the current study, the aforementioned research predominantly focuses upon loanword cognates or direct loanwords. Yet, this study is the first to examine the pedagogical applicability of pseudo-loanword vocabulary items for foreign language acquisition. This study is also the first to examine the use of such

items from a CALL-based context, and the first to do so in the Korean (EFL) environment. Preliminary results suggest that students were unable to consistently build new form-meaning connections between pseudo-loanwords in Korean and the meaning of Standard American English equivalents. Although CALL-based contexts may require different vocabulary learning strategies over that of the classroom, these are not considered to be the primary factors leading to this result.

The fact is pseudo-loanwords maintain the need for learners to engage in radical semantic shift from the L1, versus direct loanwords, when using the foreign language. Where such 'subtle distinctions' are required, the learning of meanings can potentially be very difficult (Oller & Ziaohosseiny in Brown, 2000, p. 212).

> Examples of subtle distinctions at the lexical level may be seen in false cognates like the French word *parent*, which in the singular means 'relative' or 'kin', while only the plural (*parents*) means 'parents'. … In recent years, research on CLI [Cross Linguistic Influence] has uncovered a number of instances of subtle differences causing great difficulty (Sjoholm, 1995)" (Brown, 2000, p. 213).

In this regard, foreign language acquisition research shows that aspects of language exhibiting greater difference between what is familiar and what is to be learned, can be acquired more easily over that which exhibits 'subtle distinctions' or 'minimal learning distance'. Such a principle may be in effect within the current study, where one cognate has already been acquired in the form of a pseudo-loanword, producing an L1 form-meaning association. In the process of English language acquisition, the Korean learner is often required to keep the pseudo-loanword form constant – there is similarity in form in the case of false cognates – while replacing the meaning, as opposed to other vocabulary items where form is essentially replaced and meaning is kept constant in the development of new form-

meaning associations. This also implies that unlike previous loanword use studies, applying associative tasks in the learning process, pseudo-loanwords may specifically require recontextualization tasks before learning can occur and a new meaning schema solidifies.

This relates to the information processing model, as presented by Brown (2002), which depicts learners as engaging in linguistic processing from either an L2/EFL oriented or meta-language (L1) oriented perspective. This sees learners, when presented with loanwords, initially engaging in linguistic processing from an L1 (metalinguistic) orientation. This is particularly evident when the provided input is beyond L2 (second/foreign language) capability, or where background information sought for linguistic retrieval was initially encoded in the first language. This would support Selinker's (1992) claim:

> L2 learners often conduct a cognitive inter-lingual comparison, or some
>
> sort of CA [comparative analysis] between the linguistic form they have
>
> noticed in the input, and knowledge of their native language. Therefore,
>
> instruction which provides CMI [contrastive metalinguistic input] may
>
> assist the learner in conducting an L1-L2 comparison, and arriving at
>
> the correct L2 generalization (Kupferberg, 1999, p. 3).

That is, where CMI is "defined as teacher-induced salience which foregrounds differences between the learner's L1 and L2 which have been established as areas of difficulty in studies independent of CA" (Kupferberg & Olshtain, in Kupferberg, 1999, p. 3). An L1-L2 comparison is defined "within a model of attention and memory in L2 acquisition as a conceptually-driven activity conducted in short-term memory between the specific input to which the learners are exposed and the knowledge (including L1 knowledge) stored in their long-term memory" (Kupferberg, 1999, p. 4).

The above indicates that pseudo-loanwords, compared to other vocabulary items, exhibit 'minimal learning distance', involve interlingual comparison from a metalinguistic orientation, and are consequently more problematic for learners in the foreign language acquisition process. In other words, the original L1 form-meaning association causes greater interference in the learning process for pseudo-loanwords compared to other loan terms and lexical items. The use of pseudo-loanwords over direct loanwords could have proven inherently more problematic for learners, and this may have impacted participants, and therefore affected the results obtained by the current investigation compared to that of other loanword studies. This now leads us into a discussion concerning the stabilization of lexical use by learners involved in the study.

Vocabulary Acquisition and Interlanguage Stabilization

Han (2004a) notes that there are a multitude of definitions for fossilization, but in general it refers to the "… phenomenon of the non-progression of learning despite continuous exposure to input, adequate motivation to learn, and sufficient opportunity for practice" (Han, 2004a, p. 213). The lack of uniformity in understanding the term has seen it applied in various contexts from "stabilized errors (e.g. Schumann, 1978), a learning plateau (e.g. Flynn & O'Neil, 1988), ingrained errors (e.g. Valette, 1991), systemic use of erroneous forms (e.g. Allwright & Bailey, 1991), errors made by advanced learners (e.g. Selinker & Mascia, 1999)" right through to "errors that are impervious to negative evidence (e.g. Lin & Hedgcock, 1996)" and "persistent difficulty (e.g. Hawkins, 2000)" (Han, 2004a, pp. 218-219). In the case of Nakuma (1998), fossilization, as a performance level phenomenon, is based on the learner's conclusion that a given foreign language form need not be acquired because it is already available to the foreign language from the L1 (through

transfer). As such, there is perceived to be no need to acquire a new form-meaning association. That is, since interlingually identified forms of vocabulary can be viewed as either positive (perfectly overlapping in the L1 and the other language) or negative (non-overlapping), seeing either imperceptible or perceptible deviation from foreign language native norms. In a process akin to what Nakuma describes as learners continually relying on fallback to L1 form-meaning associations, Selinker (1992) has conceived of interlingual fossilization as the consequence of learner reliance on the first language.

Results of the current study suggest that perhaps a naturally occurring interlingual fossilization, probably more suitably termed 'lexical stabilization' since the term fossilization holds connotations of permanence, is indeed evident within Korea. Support for the cause of such a phenomenon has been linked to the Englishization of Korean (Baik & Shim 1998; J. J. Lee, 2004; Shim, 1994). Specifically, native Korean words and Sino-Korean words are being replaced by English ones, and use of new phonemes (from English) and phonological rules amongst the younger generation of Koreans are starting to appear. So too, many L1 speakers of English residing in Korea are using the pseudo-loanwords of their students when communicating, not only with them in social contexts, but also with other L1 speakers of English residing in-country ("English Teachers Risk Losing Skills", 2006). This serves to illustrate how pervasive, and accepted, the use of such terms have become in Korea. So too, Shim (1999) illustrates the appearance of Korean English forms in English language learning textbooks used in schools, contrary to expectations or opinions of the wider Korean populace. This also highlights Korean learners, perhaps inadvertently, beginning to 'make the language their own' (Kachru, 1998, 2005). It also provides an understanding as to why Korean students at all levels (from beginner to advanced), persist in the use of pseudo-

loanwords in English communication, and are often unaware of their misuse (Shaffer, 1999) in terms of the target language (i.e. Standard American English).

Although fossilization has been recognized as idiosyncratic (see Nakuma, 1998; Selinker, 1972; Selinker & Lamendella, 1978), as Larson-Freeman (1997) indicates, the specific L1 of learners also produces a distinctive interlanguage. This dictates a specific interlanguage for Korean learners, at the global fossilization level, but at the individual or local fossilization level, individuals might be able to employ specific lexical items in particular contexts – as perhaps evidenced by the results showing marginal improvement. This can assist in understanding why "by the time they enter college, Korean students usually have completed six years of English classes, yet most are unable to carry on simple conversations with native speakers or write sentences free of basic grammatical errors" (Niederhauser, 1997, p. 9). It also assists in explaining why participants in this study, although possessing the specific knowledge of terms such as pseudo-loanwords, were not able to gain control over the meanings and usage of such words in Standard American English as a stabilized use of interlanguage is being employed.

This lexical stabilization phenomenon can be related to the aforementioned theories of Henrickson (1999), Qian, (1999), and Melka (in Schmitt, 2000), as presented in Chapter Two, where vocabulary acquisition is viewed as a continuum of knowing rather than lexical items which are either known or unknown. To move pseudo-loanwords along the continuum first relies on achieving depth of lexical knowledge through a process of semantic shift. In addition, a shift from productive L1 form-meaning association, and receptive foreign language form-meaning association, to that of productive and receptive foreign language form-meaning association needs to occur. It is asserted that through the continued use of the L1 (Korean) form-meaning association, by L1 English speaking and Korean English

speakers and instructors in-country, that the process of semantic shift to the foreign language (Standard American English) form-meaning association, is being slowed, or even inhibited, within Korea.

The affective cognitive model of Vigal and Oller (1976), while relating predominantly to structural fossilization, can serve to illustrate the aforementioned notion. This model distinguishes between affective feedback (i.e. approval or disapproval encoded in kinesic mechanisms such as gestures, facial expressions, and so on), and cognitive feedback (i.e. understanding or lack of understanding provided by sounds, phrases, structures, discourse, and the like). Although the former was identified as not necessary for language learning, negative cognitive feedback is important, as Vigil and Oller indicate, and Schachter (1983, p. 183) noted, "unless learners receive appropriate negative input, fossilization will occur."

> Fossilized items, according to this model, are those deviant items in the speech of a learner that first gain positive affective feedback ('keep talking') then positive cognitive feedback ('I understand'), reinforcing an incorrect form of language. It is interesting that this internalization of incorrect forms takes place by means of the same processes as the internalization of correct forms (Brown, 2000, p. 232).

A traffic signal metaphor is also employed:

> The 'green light' of the affective feedback mode allows the sender to continue attempting to get the message across; a 'red light' causes the sender to abort such attempts. … A green light here symbolizes noncorrective feedback that says 'I understand your message'. A red light symbolizes corrective feedback that takes on a myriad of possible forms … and causes the learner to make some kind of alteration in production (Brown, 2000, pp. 235-236).

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Pushing the metaphor further:

> yellow light could represent those various shades of colour that are
> interpreted by the learner as falling somewhere in between a complete
> green light and a red light, causing the learner to adjust, to alter, to
> recycle, to try again in some way. Note that fossilization may be the
> result of too many green lights when there should have been some
> yellow or red lights. The most useful implication of Vigil and Oller's
> model for a theory of error treatment is that cognitive feedback must be
> optimal in order to be effective … ignoring erroneous behaviour has the
> effect of a positive reinforcer (Brown, 2000, p. 236).

Relating the aforementioned model to the instructional emphasis on communication, as opposed to accuracy, presented in the CLT approach, EFL instructors would allow, or green light, the use of understandable pseudo-loanwords in the Korean communicative classroom. This is in opposition to red lighting or yellow lighting the terms, and providing association or recontextualization with English equivalent terminology and seeing, in the words of Han (2004, p. 162), instruction promoting fossilization. However, such language use on the part of learners could also be "… due to lack of willingness to take risks. It is 'safe' to stay within patterns that accomplish the desired function even though there may be some errors in those patterns" (Brown, 2000, p. 150). However, it is more likely that 'communicative borrowing' occurs, a strategy where learners fall back to the L1 in order to get their message across. The danger here is that successful communication does not depend entirely on formal correction as persistent errors can lead to fossilization where a learner, uncorrected, is "still able to successfully get their message understood, has no sociofunctional *need* to alter their IL [interlanguage] and so it fossilizes in that state" (Powell, 1998, p. 8). It is therefore not inconceivable that

use of the CLT approach, as employed by L1 English speaking and Korean instructors alike, has lead to a 'stabilized interlanguage' for Korean EFL students. As noted:

> The most intuitive account for fossilization focuses on the notion of entrenchment. When we practice a given skill thousands of times, we soon find that it has become automated or entrenched. The more we continue to practice that skill, the deeper the entrenchment and the more difficult it becomes to block the use of the skill (MacWhinney, 2005, p. 18).

The emergence of a stabilized interlanguage in Korean learners could even support why unlearning could occur, due to student hypothesis testing for language use, although the type of words and the small number of the current sample cannot provide definitive proof for this theory or why the use of L1 pseudo-loanwords for foreign language acquisition lead to minimal learning gains. For that, a lengthy longitudinal study conducted over many years would be required, ranging from five to perhaps even twenty years (as indicated by Han, 2004a). Further, as James (1998) reminds us, aside from lists of 'common mistakes' or false cognates, it is not easy to find systematic methods to assist learners in gaining advantage from research into fields such as error analysis. Further, as in the Brown (1995) and Brown and Williams (1985) loanword studies, the word level of the borrowed terms as used in the L1 is not known, and it is also recognized that this is a potential weakness for this experiment. In regards to this, threats to internal validity and reliability will now be considered.

Impact of Threats on Internal Reliability and Validity

According to Bailey (1998) there will always be some tension between reliability and validity, and gains in one have to be balanced against losses in the other. In terms of reliability, or achieving consistency of scores and answers provided by instruments, this was obtained by utilizing objective scoring methods and coding data for entry into computer for analysis. In addition, due to the nature of treatment, the CALL modules were able to present identical data to each participant, providing the same learning content, correction, and feedback to all. Rasch analysis was also employed to measure person-item fit, hereby determining the level of instrument reliability and assisting with validity by ensuring fit of the instruments to unidimensional measurement scales.

However, since the current study was quasi-experimental, it did not utilise random assignment and therefore had to "rely instead on other techniques to control (or at least reduce) threats to internal validity" (Fraenkel & Wallen, 2003, p. 278). Overall threats that may have impacted upon the one-group pre-test/post-test experimental design include: subject characteristics, mortality, data collector characteristics, data collector bias, history, maturation, regression, and implementation. The specific threats range from location, instrumentation, and instrument decay for the survey, through to instrument decay, testing, and attidunal threats for the pre- and post-test, and maturation, location, and subject characteristic threats for the treatment. Each of these threats will now be discussed, although it is perceived that attidunal and treatment location threats will be the most influential.

The One-group Pre-test/Post-test Experimental Design

Participants were obtained from a sample of convenience, which is often necessary in the case of educational research (see Borg & Gall, in Best & Kahn,

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1993), and treatment distributed through a process of stratified sampling, based on class role sheet order. All students were of an intermediate English level as ranked by university placement tests, so believed to be relatively on the same level in terms of linguistic knowledge of English. This thereby promoted reduction in the risk of regression, as beginner or advanced level students may have performed better or worse due to their pre-existing English levels.

Through use of an appropriate and well selected treatment group, along with confining experiment runtime to the period of half a semester, maturation was limited and mortality risk reduced. University policy dictating eight class hours absent as an automatic failure for the course, required attendance, and thus also assisted in alleviating mortality risks. In fact, only a loss of five students occurred. This left a sample of 108, and a mortality rate of 4.4%, which is small and likely to provide only very marginal impact on the results. Further, only participants who completed the survey, the pre- and post-tests, and the treatment, were included in data analysis. Students who did not complete one of the instruments, or failed to submit homework on time, were excluded from the research. The five students who were dropped from the study were absent due to illness, or their need to attend to personal or other school matters, rather than due to failing the course or dropping out of university. The majors of the lost students were: one from electronics (no post-test), one from pharmacy (no pre- or post-test), and three from occupational therapy (no post-tests), while no subjects from the early childhood education and elementary education classes were lost.

Although participant backgrounds in terms of their majors were different, it is believed that this did not hold a detrimental impact on the use of treatment. This is due to the majority of students having had similar prior computer exposure at secondary school level, and they were not engaged in any other online learning

activities at the tertiary level during the semester in which the experiment was conducted. In addition, even though participants consisted of 31% males and 69% females, gender was not perceived to be influential on the results of the study. However, it is thought that attitudes towards the study, and use of the material in homework mode would prove the highest threat regarding effective material use, learning, and appropriate data collection. Further, the characteristics of students attending low ranked universities, such as the one where the experiment was conducted, could have impinged upon the study as opposed to having run the experiment at a 'SKY' university. (The top three ranking schools in the country: SKY – Seoul National University; Korea University; and, Yonsei University). Unfortunately, no research is available that examines the learner characteristics of freshmen attending these elite level universities to that of freshmen attending very low ranked universities in Korea. Nonetheless, it is believed that such characteristics as pertaining to attitude toward learning, at least in the initial years of university, may include such aspects as those already discussed as impinging factors on the current study: low self-efficacy, low self-esteem, and low motivation.

Additionally, as the sample size is rather small, this naturally imposes limitations on the ability to generalize results, and further compounding this is the refinement of the experiment to a single school, although both factors do ensure greater experimental control (Fraenkel & Wallen, 2003). The short time frame of two months for the study may also be considered a limiting factor. However, for new and experimental techniques to be considered effective and viable tools for continued use in educational environments, it can be argued that gains in learning need to occur in such a short timeframe. In fact, the experiment ran for more than half of the in-class teaching time allotted during the sixteen-week semester after events such as festivals, sports days, midterm and final exams are deducted from the schedule. Further,

experiments of this length are not unheard of in the literature (e.g. Hegelheimer & Tower, 2004).

To ensure that each experimental group was exposed to identical data collector characteristics, a 35-year-old American female instructor with eight years of EFL teaching experience in Korea (seven at the workplace where the experiment was conducted) was responsible for the collection and deployment of the survey, pre-test, treatment, and post-test. Although this could lead to implementation threats, by using only a single instructor, the same bias toward the study, intentional or unintentional and positive or negative, would be equally provided to each participant. Subsequently, to alleviate data collector bias, specific instructions were provided regarding the deployment and collection of instruments. These included: specifying the weeks of semester when the tests would be delivered, the homework distributed and disks collected, as well as the length of time permitted for the proctoring of each test. Instruments were provided just prior to required distribution, and were returned to the researcher immediately upon student submission. Additionally, students were provided with a unique code so that both the data collector and researcher were not aware of which specific students had participated in which treatment when instruments were being collected and when the scores were being entered into the statistical package for data analysis.

Any unanticipated or unplanned events were controlled by providing instruments to each class during the same week of semester, while taking such factors such as university events and public holidays into account. However, much like treatment location threats, it is unclear what history threats may have impacted upon individual students during their use of treatment throughout the homework process. However, since all students had the option to redo activities if required, then students reattempting certain sections of the homework, if they felt any external

influences may have made an impact, could alleviate such a threat.

Survey of Student Attitude towards
Computer Assisted Learning in EFL

A translation of the survey was administered to participants in the same location, as all had the same classroom, and in the first lecture period of each class during week four of semester. This minimized location threat on the study. Further, as already mentioned, the same instructor was responsible for distribution and collection of the instrument for each class. Administration of the survey was also handled by a Korean assistant, remaining on-hand in case students experienced difficulties. As for instrumentation, translation was necessary since salience assists in obtaining accurate information and higher response rates (Borg & Gall, 1989). Translation and piloting of the instrument with representative samples, as part of a focus group, also served to verify the content validity of translation before distribution to trial groups. Further, to establish internal consistency of the instrument alpha coefficients were calculated on trial group data to confirm reliability, and response frequency examined to ensure scale effectiveness. Any necessary modifications were then made to the survey before final deployment. This initial screening assisted in verifying that extraneous material had been omitted, and that the survey was a representative or reliable measure of the trait under examination.

Direct administration of the survey within class time offered several advantages. Chiefly, high response rates as well as the ability of an administrator to take and answer questions prior to survey completion (Fraenkel & Wallen, 2003, p. 399). As the survey was designed to be completed within a twenty- to thirty-minute timeframe, instrument decay was alleviated, as students could take the entire fifty-minute lecture period to complete the survey if necessary. The survey also contained

a four-point Likert-style response grade for each closed-ended question. The advantage of this is that all subjects responded to the same options, providing standardized data for analysis and coding on the computer (Fraenkel & Wallen, 2003). Examination of the frequency of responses then assisted in determining if missing data existed. In such cases, the Rasch model can compensate (Bond & Fox, 2001). Rasch analysis would also highlight items with low indices of reliability and validity, which were then discarded, as the essential criterion was compatibility of items with the model, or item fit to measurement scale – disposition toward computer assisted learning of English as a foreign language. Consequently, the survey came to provide interval data for correlational analysis in the multiple regression phase of data analysis. In addition, the trait being measured was specifically based on data from the literature (such as Ahn, 2002; Cortazzi, 1990; Eastmond, 2000; Finch & Hyun, 2000; Hofstede, 1986; Joo, 1997; Min, et al, 2000; Pak, 1999; Park, 2001; Schmitt, 1997; Windle, 2003), and consistent in terms of gathering data on the three constructs under examination.

Test of Student Understanding of Pseudo-loanwords

Discrete-point tests, such as the multiple-choice test developed and employed as the pre- and post-test for this research, are advantageous as they allow for the collection of data that is easily quantifiable and can be accurately and objectively marked. Item difficulty was varied by choice of pseudo-loanwords, and the choice of English words used in test item statements, with particular care not to mix the level of difficulty within single items. By varying the closeness of meaning between distracters and the key, it was easy to modify items to varying degrees of difficulty (Nagy, Herman, & Anderson, 1985). When writing test activities, items were checked to ensure that they had only one viable correct response and were not interdependent.

The order of correct responses was also randomized, so that test wiseness could be further reduced. In addition, distracters were developed that would be both plausible and equally appealing to students who did not know the correct answer.

Location threat was diminished as both the pre- and post-test was delivered in the same location, by the same instructor, and at the same time of the weekly class schedule. That is, the first lecture period of week six of semester for the pre-test, and the last lecture period of week fourteen for the post-test. It was also important during the testing phase to consider the effect of student exposure to the pre-test when delivering the post-test. If the second test was administered too soon, students would have recall of the items from the first test, and an alternate one would need developing. If the test was administered too late then no reliable measure would have been obtained (Fraenkel & Wallen, 2003). Since the period of delivery between each test was eight weeks, it was not perceived necessary to develop a second test instrument for the post-test.

It is important to note that when multiple-choice tests are created, the test banks often do not provide balanced keys. Although this seems to violate the conventional wisdom of multiple-choice answer creation, previous studies in fact note that balanced keys are not a significant factor in testing, as no more errors are made in any case where one series of particular options is correct over another (Kujawski Taylor, 2005). In addition, since Korean students are used to taking tests similar to the style of the TOEFL and TOEIC, the multiple-choice test developed for this study came to mirror the TOEFL structure section and presented students with a cloze-type statement along with four answer choices. Although new versions of the TOEFL and TOEIC have since been introduced (during 2006 and into 2007), due to student familiarity with such tests at the time of this study (2004) three distracters and one key were consciously selected for use. This decision was made even though

research indicates that three choices (two distracters and the key) are optimal for multiple-choice type tests (see Rodriguez, 2005), with four being the most common probably due to face validity while still allowing for an acceptably valid and reliable test, albeit more difficult (Taylor, 2005).

As with the survey, the test underwent reliability and validity checks by trialling before final deployment, and Rasch analysis before use in hypothesis testing. Trialling assisted in accurately developing a reliable and valid instrument by ensuring the test was appropriate for deployment. Rasch analysis would also assist in determining the reliability of the test, in terms of person-item difficulty calibration, and validity by ensuring fit of the items to the model and therefore effective measurement of a single trait – student understanding of the English meanings of pseudo-loanwords used in Korean. In this manner, measures were used for hypothesis testing.

CALL Modules

The CALL modules used in treatment were homework-based so that they would not impinge upon the existing syllabus schedule, thereby being less obtrusive and more easily implemented within the existing university English program curricula. This also came to assist in minimizing instructor-bias as treatment involved measuring performance of student linguistic understanding and development resulting from completion of material outside the classroom. However, this could have lead to subject characteristic threats, where participants neglected homework completion or completed materials in one sitting, rather than throughout semester, and this was reduced by implementing standard-practice controls (i.e. incremental homework submission due dates – four submissions in total, one for every two weeks of treatment).

Since all of the classes taught by the instructor were using one of the CALL treatments, there was perceived to be no novelty effect in place. Although it is novel to be using CALL in the tertiary sector with EFL, even today, this was not believed to have provided an overtly positive or negative impact on data collected for the experiment. This is primarily due to the exposure students have to computers in other areas of their lives as digital natives (Prensky, 2001), such as in the home environment or from one of the many internet cafes that dot the Korean urbanscape. Further, control of attidunal effect stemmed from incorporating learning content as part of normal taught-course homework procedure. However, as already discussed, student interpretation of the CALL modules, as part of the university English program, may have introduced a negative washback effect that could have come to impact upon the results obtained.

The only threat that was not directly controlled, in regards to treatment, was the place students elected to engage in use of the CALL homework modules – treatment location. Nevertheless, it was expected that most students would take the homework seriously, allocate an appropriate time to complete the language learning activities, and do so in an appropriate and suitable place. Yet, the modules could have been completed in various locales ranging from dorm rooms (with four students per room possibly distracting the user), internet cafes (with many customers providing a 24-hour noisy gaming environment), school computer labs (with limited space and time availability), or private bedrooms (away from campus, in the students' hometowns). At the particular university where the experiment was conducted, most freshmen live in dormitories and travel home for the weekend, so it is presumed that the latter venue would have been the most likely. Although being a considerable threat to the results obtained, any form of computer-based homework provided to students would be subject to the same circumstances, and would need to prove effective under

similar conditions. To alleviate such a threat, the researcher could have required the distributing instructor to book computer lab time on campus, so that students could be assured of a place to go and complete the homework. However, such a condition would impinge upon the notion of promoting learner autonomy and self-regulatory behaviour, and prevent students from completing the homework in locations and at times more convenient to them.

No technical glitches were reported from the administering instructor in the provision and use of the modules for homework. However, contingency measures of providing the instructor with training in how to use the CALL materials so as to provide assistance to students on an as-needed basis were taken into account. Still, it has been recognized that those students who need the most assistance are generally also the most reluctant to ask for it (Newman, 1994). Ultimately, the language exercises were checked for appropriateness by L1 English speaking EFL instructors while they trialled the software, and before the modules were piloted with a representative student group. After these testing periods, small modifications were made to the two systems before they were made available for final distribution. As a result, it was believed that no student experienced major technical difficulties in the completion or submission of their CALL-based homework. Through all of the above-mentioned actions, it is believed that a course of reliable and valid treatment was provided to students throughout the empirical phase of the research.

Summary

Implications arising from the data were discussed in this chapter. For the first hypothesis, this involved examining the association of computer assisted learning of English with the learning of pseudo-loanwords. It was then determined that computer use did not bias the results obtained through use of CALL in treatment, and as such,

other extraneous variables must have held an impact on the results of the study. This then lead into a discussion of issues centring on hypothesis two, involving the impact of instructional approaches on L2 vocabulary acquisition. This revolved around consequences of the changing Korean cultural learning style, and the influence of negative washback on the study. Following this, a discussion on loanword utilization for foreign language development occurred, examining the issue of successful application of loanwords in alternate contexts versus the Korean context, as well as the notion of vocabulary acquisition and interlanguage stabilization on the peninsula. Finally, aspects of reliability and validity were considered, with treatment location and attidunal effect arising as the largest concerns. The following chapter will now detail the contributions this research has made to the existing body of literature, highlighting the significance of this work, along with the conclusions that can be drawn, before delving into the limitations of the study and underscoring future areas of research.

CHAPTER SIX

CONCLUSION

Overview

This final chapter provides a conclusion for the study. Initially, the contributions to the literature that the research has made will be highlighted. Answers to the research questions, the findings, and the implications behind the results will then be briefly reviewed. Finally, the significance of the study, along with limitations affecting the thesis will be discussed, before detailing several areas of further research.

Introduction

The aim of this study was to examine the educational effectiveness of using the English inherent within the native language of Korean EFL students for the development of linguistic competence and the enhancement of attitudes towards learning in a mandatory university English language program, and to strategically investigate utilizing researcher developed, Computer Assisted Language Learning (CALL) homework modules for such a purpose. Therefore, the research sought to understand the interaction between multiple dimensions of computer assisted learning and English foreign language acquisition of Korean freshmen university students. In particular, to examine how the student's knowledge of English words adapted for use in the Korean vernacular – loanwords – is affected by their attitudes towards computerized instruction, their preference for certain methods of learning and teaching, and also by the attributes of computerized instructional packages. The following two tables provide a summary of research contributions resulting from the

study (see Table 14.1 and Table 14.2). Contributions are listed by the primary focus

of each research aspect/objective, and identifiable from the resulting major outcome.

Table 14.1

Summary of research contributions by research aspect

Research Aspect	Primary Focus	Major Outcome
Korean cultural learning style	Affirm the traditional view held by the literature.	The Korean cultural learning style appears to be changing, and accepted 'stereotypes' presented by the literature need to be re-examined.
L1 use in the EFL context	Extend upon the success of direct loanwords applied in other (non-CALL-based) EFL and ESL contexts.	Students were consistently unable to build new form-meaning connections between Korean pseudo-loanwords and English equivalents, implying 'lexical stabilization'.
CALL module development	Develop two CALL modules to be used in an experiment utilizing the L1 as the source for foreign language learning.	The first study to examine the use of Korean pseudo-loanwords in EFL through use of a computer-based multimedia learning solution.
Survey instrument	Develop a unique and refined instrument with constructs consisting of disposition towards CAI, Korean learning style, and English as foreign language learning style.	Measured the association between the method of presenting learning content to students (CAI), and the learning content itself (pseudo-loanwords).
Analysis	Utilize Rasch analysis techniques with the data.	First study to apply Rasch analysis in Korean CALL.
Literature review	Comprehensively investigate areas pertaining to EFL and the application of computer technology in the Korean education system, as well as the cultural influences on computer assisted learning of English as a foreign language, and loanword use in the Korean context.	Identified a significant number of gaps in the literature, all of which highlight potential areas of future research.

Table 14.2

Summary of research contributions by research objective

Research Objective	Primary Focus	Major Outcome
Research Objective 1	To determine the impact of using CAI with Korean students.	Computer use in the Korean EFL context would not bias any results obtained through use of computer assisted instruction (particularly during the treatment phase of this study).
Research Objective 2(a)	Examine educational effectiveness of using English inherent within the native vernacular (pseudo-loanwords) for development of English language linguistic competence and enhancement of attitudes towards learning.	Pseudo-loanwords can be applied in Korean EFL teaching, and provide somewhat positive learning results, albeit these are marginal and limited.
Research Objective 2(b)	Investigate the utility of using researcher developed CALL homework modules.	Both the behaviourist-based restricted and communicative-based open CALL approaches provide similar learning gains when applying L1 data as the source for foreign language learning material in the context of Korean freshmen university English classes.

Conclusions about the Research Questions

The first research objective sought to determine if any association existed between the method of presenting learning content to students (in the form of computer assisted instruction), and the learning content itself (in the form of pseudo-loanword vocabulary), and how any association may impact upon results obtained during the course of treatment. The research question was: Is student understanding

of pseudo-loanwords associated with dispositions towards computer assisted learning of English as a foreign language?

The study did not find a correlation between student disposition towards computer assisted learning of English as a foreign language (the trait measured by the survey) and the understanding of pseudo-loanwords (as represented by test data).

The second research objective focused on examining the impact of CALL instructional approaches upon vocabulary acquisition, and investigating the applicability of loanword utilization for foreign language development. The research question was: Does the application of different computer assisted language learning instructional strategies affect student understanding of pseudo-loanwords?

The question was explored through construction of a linear scale to measure Korean student understanding of loanwords, used as the pre-test and post-test in the experimental phase of the research, and the development of two computer assisted language instructional modules as treatment. Evidence was found to indicate that the use of L1 vocabulary, in the form of pseudo-loanwords, can work to promote learning and understanding in the Korean CALL context but with only marginal success. Although the communicative-based open CALL approach did produce marginally higher effects, consistency in the level of results obtained also show that both behaviourist-based restricted CALL and communicative-based open CALL instructional approaches provide similar learning gains for Korean university freshman enrolled in General English language courses teaching Standard American English.

Implications of the Study

There are a number of implications arising from this study's findings. However, the most significant relate to: (a) the usability of computer-based EFL instruction in the Korean tertiary education sector; (b) a need for reinterpretation of the Korean cultural learning style as it relates to EFL; and (c) the existence of a stabilized interlanguage on the Korean peninsula.

Significance and Recommendations

One of the most noteworthy insights gleaned from the results of this study is the need to reexamine the stereotypes about Korean learners as presented in the EFL literature. There appears to be a movement away from traditional views of language learning and teaching by Korean students and instructors (see Finch, 2004; Windle, 2003). For example, Koreans no longer regard the teacher (university instructor) as an authoritive figure who should go unquestioned (Finch, 2004; Windle, 2003). Korean students do not want to passively sit in class receiving knowledge (Finch, 2004). As Reid (1987) indicates, from a group of nine language backgrounds, Koreans were the most visual in learning style preference but favour kinaesthetic and tactile learning styles. Further, Korean concern for harmony within the group, as presented by Armitage (2001) is by its very nature not at variance with a collaborative use of multimedia activities and CMC (computer mediated communication) if attuned and adapted to the Korean EFL classroom. This is important to recognize since to date, the "received truth" relating to the educational traditions of the East Asian learning context (see Pierson, 1996, p. 52) perceives these learners as individuals who are "conditioned by a pattern of cultural forces that are not harmonious to learner autonomy, independence or self-direction" (Liu, 1998, p. 5). From a field level perspective, the changing traits and classroom expectations

of Korean learners will impact the EFL sector in Korea. It is therefore important to further examine the changing aspects of Korean students and the educational context in which they operate, and develop materials for these students that enables education to be provided in a manner in which teaching and learning is the most effective.

In addition, at the practitioner level, it is important to keep in mind the influence that the Korean cultural learning style holds over students. Consequently, it is believed that any application of CALL, particularly in EFL environments, needs to take into account the local cultural and learning context. Learning styles, beliefs, and preferences are controlling factors in language learning, with an up-to-date profile of EFL students in Korea. This holds implications for materials development and for teacher training programs (Finch, 2004), especially when we recognize the "need to match the different aspects of autonomy with the characteristics and needs of learners in specific contexts" (Littlewood, 1999, p. 71). This is important, since learner autonomy is a central issue for the success of most computer-based initiatives. Indeed, empowering students as learners is the essence of 'autonomy' according to Holec (in Benson and Voller, 1997, p. 1), who views it as "the ability to take charge of one's learning." Yet, as Briguglio (2000, p. 1) recognizes, the aim of education is to produce confident, independent, self-directed learners, but students like those from Korea require a more structured and gradual approach to transition them "to become confident and independent learners." Research shows that the most successful students are those that possess the ability to monitor their own learning progress (Schapiro & Livingston, 2000). Self-discipline and motivation have been found to be predictors of online course success (Waschull, 2005). Students who can monitor their own learning perform significantly better in computer-based instructional environments as independent learner strategies are critical to achieving academic

success from such instruction (Williams & Hellman, 2004). In this regard, it is essential that teachers applying CALL with their students focus upon structuring learning content appropriately, and seek to develop motivation and foster aspects such as self-efficacy in their language students.

Results of this study also indicate that there is a significant lack of understanding of the English equivalents of pseudo-loanwords among Korean EFL students, and that it is difficult for them to establish additional semantic properties for these lexical items. This lack of understanding of English equivalents for pseudo-loanwords is the result of students having no sociofunctional need to alter their use of this interlanguage, which in turn promotes 'lexical stabilization'. The challenge that arises here for teachers and material developers alike is to make students more aware of their language use and misuse, providing material that focuses on assisting students in understanding and using the English equivalents for these terms. To this end, alternate tasks, like recontextualization, may prove more appropriate than the associative tasks used in this study, and used in previous research on the effectiveness of employing direct loanwords in an EFL context for learning. As this occurs, further research will be needed to ascertain which aspects of the L1 are most beneficial for use with Korean students engaged in learning English as a Foreign Language, so that support material for language practice and study can be developed.

Finally, it is increasingly essential for university administrators and the departments providing university English programs in Korea to implement CALL, especially the development of culturally adapted software systems for language learning. This need has emerged as a result of current graduation requirements, which require not only English skills but functional ICT (information communication technology) skills. More fundamentally, learners will eventually demand alignment of the university sector with government initiatives put in place at the grade school

level concerning e-learning. Although the integration of computer-based learning and information communication technology use within the large majority of mandatory university English programs in Korea is something that has yet to occur, inevitably students will begin to demand a multimedia supported learning environment and associated teaching methods at the tertiary level. Administrators will also need to ensure that certain conditions are met when developing and using CALL in the university English programs of Korea. Teachers should not be assigned to a lab or computer classroom, say once a week, then left to their own devices (K. W. Lee, 2000). Teachers need classroom support and adequate training in computer applications. Further, students need to be made aware of their responsibilities in terms of using the computers for learning, such as when and how to complete assigned work using the tools and software made available to them (Hubbard, 2004). The technology itself is also important, and administrators must ensure that adequate and functional computers and software are provided and adequately maintained for teachers. Otherwise, the computer could sit dormant in the classroom for months on end due to a problem as simple as a dirty mouse preventing interaction with software (Cuban, 2001). Most importantly, the usability and effectiveness of computer-based EFL instruction in the Korean tertiary education sector must be built upon effective content and sound instructional design principles.

In summary, the thesis is significant at the field level, practitioner level and administrative level and several recommendations result. At the field level it is recommended that re-examination of what constitutes the attributes of a 'Korean learner' occurs, and the changing traits and classroom expectations of Korean students be identified so that appropriate language learning material can be developed for their use. It is also recommended that any development of CALL for Korean learners needs to take into account the local cultural and learning context,

and this will necessarily hold implications for materials development and teacher training programs. At the practitioner level it is recommended that learner responsibility be well established to ensure multimedia-based learning content proves to be of the most educational value. It also needs to be understood that for Korean EFL students the L1 meanings of pseudo-loanwords, as cognates, are resistant to intervention. The challenge that results sees a need for instructors and material developers alike to make students more aware of their language use and misuse, and provide more effective learning content. It therefore recommended that further research be conducted to ascertain which aspects of the L1 are most beneficial for use with Korean students engaged in learning English as a Foreign Language, so that support material for language practice and study can be developed. Further, at the administrative level it is recommended that appropriate teacher training in technology be recognized as essential and administrative support in terms of providing adequate, maintained, and functional hardware and software seen as necessary. This will be particularly vital when CALL initiatives begin to occur on a widespread scale at the tertiary level in Korea. Most importantly, the usability and effectiveness of computer-based EFL instruction must be built upon effective content as well as sound instructional design principles so that culturally adapted software systems for language learning can emerge.

Limitations

As with all research, this study has several limitations. In particular, the experiment consisted of only a small number of subjects, and as such, this comes to limit the ability to generalize the results obtained. However, this is certainly not a factor unique to this research, with a large number of peer-reviewed journal articles focusing on Korean students having the same limitation. The use of a limited number

of subjects in empirical studies is a worrying trend. Regardless, most educational research studies, including the present study, rely on samples of convenience. Nevertheless, the advantage of restricting the sample to one school and to a smaller sample size is that it can afford greater experimental control to the researcher (Fraenkel & Wallen, 2003).

Treatment materials were provided to students as homework modules, and it may be argued that this is a limitation, as incorporating the materials within the existing curriculum during class time may be more fruitful. This concern must await another later study. In addition, time allotted for use of the CD was short, and more positive outcomes might have been produced with more time on task. However, longer use of the software would have gone against the notion of using courseware material over a single semester, and needing it to be effective during that time period. These restrictions, and single-semester homework-based use were specifically imposed upon the study so that any English conversation instructor employing the material with their classes would not be overburdened, nor the English curriculum interrupted.

A final limitation is that the experiment was conducted at a low-ranking university. In this case, the students themselves (in terms of low self-efficacy, low self-esteem, and low motivation), along with other learner variables, such as those involving socio-economic background, social capital, or home environment, could have held sway more than what is visible from the data. In any case, multimedia education systems need to work with these types of students too (and not just those attending higher ranked schools where such learner variables may not prove to be as significant).

As there have been no previous pseudo-loanword CALL studies undertaken in Korea, this study has been able to identify a number of areas where research is

lacking, as well as a number of areas for future research, and these will now be discussed.

Areas of Future Research

The researcher has come to identify several areas of interest for further investigation. This includes the impact of culture on media use in the Korean EFL context, and the need to focus on development of learner responsibility in Korean students using CALL for language study. There is a need for the design and delivery of computer-based university English program materials that are built on the basis of effective pilot programs and research. Future research needs conducting utilizing Rasch analysis techniques; and, the application and reexamination of the loanword approach in different contexts and from different approaches needs to be undertaken.

To date, there has been limited examination by scholars of the influence of the Korean cultural learning style on the application of CALL initiatives within Korea. Also, there is limited literature detailing specifically how the Korean cultural learning style, in the Korean EFL classroom, comes to affect the use of media and computer systems for language learning. Much more research is required in regards to how Korean culture impacts CALL initiatives and can be advantageous for transitioning students to more active participation in their own L2 learning.

There has been limited research on the impact of software and courseware use with Korean EFL learners, what exists largely focuses on the collaborative use of material. So too, like teacher studies, research examining learner responses as well as their degree of satisfaction with CALL material has only recently become available but remains largely limited in scope to CMC or web-based instruction (see H. K. Choi, 2004; Hwang, 2002; C. J. Kwon, 2004; O, 2005; Oh, 2003a, 2003b). Further studies are needed to examine the Korean student use of CALL-based instruction,

particularly multimedia systems designed for individual private study, and to determine how such materials can foster the development of learning responsibility in Korean students, increase their motivation for language learning, and promote active involvement in the language learning process. This is important since it is well recognized that it is ultimately the individual who is responsible for his or her own progress, and the development of his or her own language skills (Ahn, 2002).

Despite the "... focus on the need to promote and develop multimedia assisted teaching methods in university education" (C. J. Kwon, 2005, p. 169) there is currently a contrast between grade school level reforms, concerning e-learning, with educational practice at the tertiary level. Although numerous individual educators are adopting aspects of CALL instruction and applying it within their tertiary level EFL classes, there have only been a small number of CALL systems applied in regular university English programs (Lee & Yang, 2002). Even so, these "systems are not being used properly in an integrated and standardized form within the regular university curriculum" (Hoh, 2005, p.341). In this regard, software systems and multimedia tools need to be integrated properly alongside the university English program curriculum so that research-based pilot programs can determine the most effective means for learning content development and deployment for these students. In addition, by investigating other aspects such as student perceptions, attitudes, and how they undertake language learning activities, useful information about these learners in the Korean educational environment can be obtained. For example, their beliefs, motivations, likes and dislikes, and their preferences and choices, will ultimately allow for the development of knowledge that can be effectively applied when designing e-learning systems for their use.

Some of the above issues may be addressed with the recent implementation of the u-KOREA Master Plan (2006-2010) as the nation is promoting strategies that

will see social reform emerge through the ubiquitous use of IT. Linked to this is the increasing expenditure for e-learning purposes by educational institutions, government, public institutions, companies, and individuals (see "National Computerization Agency", 2006, p. 37). This is also partly due to the Ministry of Education recently designating e-learning as a core human resource development strategy, and placing emphasis on after school studies and providing a self-teaching format in the form of "a 'cyber home learning service', letting primary and secondary schoolchildren take classes and courses that fit their academic abilities through video, chatting, and various other online media" (Office for Government Policy Coordination, 2006, p. 100). Accompanying these developments is the digitization of English textbooks for use in the after school programs, and as a supplement to primary school lessons, with nationwide distribution of this material expected by 2008. Further, to facilitate e-learning in the higher education sector, an 'e-Campus Vision 2007' was established "linking enterprises, universities and research centres to a network promoting cooperation and joint research [so] universities now share useful information via broadband network and have an effective support system for their students" (Office for Government Policy Coordination, 2006, p. 101). The impact of these strategies, and the emphasis on promoting e-learning in order to strengthen national competitiveness, will lead to changes for the L1 English speaking instructor and the use of CALL in the tertiary level EFL classroom, with these changes providing a wide range of future research possibilities.

In addition, this study is the first Korean CALL-based research to employ Rasch analysis. Many empirical studies that have been conducted in Korea might have yielded vastly different results if analysis techniques such as Rasch were applied. Particularly since …

ANOVA is extensively utilized in studies in which an independent

variable is routinely examined for interactions with another independent

variable. The discovery of spurious interaction effects produced under

ANOVA of raw scores (Embretson, 1993, 1996), when Rasch

transformations of the raw scores could easily have been employed,

calls this use into question. Embretson found that when untransformed

raw scores are subjected to multi-factor ANOVA, spurious interaction

effects between the independent variables regularly occur. Since the

interaction effect in many cases reflects the major research hypothesis,

this finding should be of concern to researchers and statisticians alike

(Romanoski & Douglas, 2002, p. 234).

Hence, there is a need for Korean researchers to adopt such techniques and apply

them locally. As this happens, it will be informative to review data analysed when

applying Rasch analysis, and evaluate the claims concerning Korean EFL students

and CALL that begin to emerge.

Further, examination of the effectiveness of using such terminology as

loanwords, particularly pseudo-loanwords, in a practical Korean EFL setting has not

been assessed and, unfortunately, the predominance of research that does exist

largely focuses on form (e.g. Colhoun & Kim, 1976; Kang, 2003; McArthur, 1992;

Nam & Southard, 1994; Shim, 1994; Yu, 1980;). Although this study examined the

viability of implementing a loanword approach in the Korean EFL context, only one

aspect of the approach was tested: pseudo-loanword use from CALL-based

instruction. To more accurately determine the limits and transferability of such an

approach, further testing in different contexts will be necessary. Modifications may

include using recontextualization tasks as opposed to the associative tasks employed

by this and other studies using direct loanwords as a basis. Changing the core

linguistic base from pseudo-loanwords to direct loanwords; or, operating the experiment while maintaining emphasis on in-class work over the deployment of homework modules.

In many ways this study has touched on all of the above areas, providing further insight into each. All are potential research agendas, and worthy of further study. It is now hoped that the contributions this research has made to the literature will allow future scholars to build upon the concepts and practicalities explored.

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APPENDIX ONE

ASPECTS OF THE KOREAN EDUCATIONAL SYSTEM

Courses, Hours, and

Required Number of Words in the Seventh English Curricula

Refer to Table A1 below (from Kwon, 2000, p. 72) for a breakdown of the English language courses, hours, and required amount of vocabulary to be learned as presented by the Seventh English Curricula.

Table A1

Courses, Hours, and Required Number of Words in the Seventh English Curricula

School	Elementary School				Middle School				High School	
Type	Level-Specific Lessons				Stage-Specific Lessons				Electives	
Grade	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
Levels	Remedial–Baseline–Advanced				7a, 7b	8a, 8b	9a, 9b	10a, 10b		
Subject (hr/wk) x Semester	EE 3 (1) x 2	EE 4 (1) x 2	EE 5 (2) x 2	EE 6 (2) x 2	ME 1 (3) x 2	ME 2 (3) x 2	ME 3 (4) x 2	High School English (4) x 2	HE 1 (4) x 2	HE 2 (4) x 2
									Reading (3) x 2	
									Conversation (3) x 2	
									Writing (3) x 2	
									2,300	2,300
									2,000	
									1,200	
Words	80 – 120	80 – 120	90 - 130	90 – 130	200	250	350	450	1,200	

Formal Levels of the South Korean Educational System

Refer to Table A2 (from NIIED, 2002, p. 38) for a breakdown of all formal

levels of the current Korean educational system.

Table A2

Formal Levels of the South Korean Educational System

Schooling Age

Age

Graduate School

College & University
Industrial University
University of Education
Junior College
Air & Correspondence University
Technical College
Miscellaneous School

High School
Air & Correspondence High School
High School Attached to Industrial Firm
Special Class
Trade High School

Middle School
Middle School Attached to Industrial Firm
Special Class
Trade School
Civic High School

Elementary School
Civic School

Kindergarten

Special School
Miscellaneous School
Miscellaneous School

Higher Education
Secondary Education
Elementary Education
Pre-school Education

Note. The above table does not illustrate the break in education experienced by Korean males when forced to leave university, or delay university entry after completing high school, to undertake military service of at least two years. Military service is compulsory for males before the age of 30. However, some doctoral research students may complete their studies in lieu of conscription. In addition, some Korean men delay military service until the maximum allowable time, which is after completion of an undergraduate degree.

APPENDIX TWO

THE SURVEY

Survey Framework

The survey of student attitudes towards Computer Assisted Language Learning in EFL (SSACAL) was developed to become a measure of student attitude towards computer assisted instruction in EFL. Crucial to development of this measure were student attitudes concerning: (a) disposition towards computer assisted instruction; (b) the Korean learning style; and (c) English as a foreign language learning style.

Section One: Disposition Towards Computer Assisted Instruction

A). Computer Competency

Items 1 and 2 of the survey opened a window on the computer experience of students in regards to educational computer use. Items 3 and 4 highlighted student abilities for doing the things, irrespective of the skill level that they believe they maintain, that they would like to do with computers. Item interest thereby lay with student CAI usage and computer skill levels.

B). Preference for Computer-Based Learning

It was pointed out, particularly around the time the 'media debate' sparked (see Clarke, 1994; and, Kozma, 1994), that CALL and computer-based learning were effective because of their novelty. These days, researchers like Cuban (2001) illustrate the opposite effect. Young learners with computers at home are becoming bored and inattentive when using computers at school. With this in mind, items 5 and 6 considered student use of computers to assist in learning from within university classes, as well as the use of computers for completion of homework activities. Korea is a collectivist based society, and knowledge of this often sways educator decisions in the assignment of tasks and activities for use with classes (Kent, 2004).

As such, items 7 through 12 asked about student use of computers both inside and outside of class, and their use of computers either by themselves, in pairs, or in groups. This maintained an overall interest in CAI usage at university, and working with computers in various collaborative modes.

C). Preference for Learning English through CAI

Items 13 to 36 emphasized various activities to assist in learning human languages with computers. Items 37 to 40 subsequently asked about the degree to which computers can assist in improving the four English language skills (reading, writing, listening, and speaking). Item 41 then asked about desirability of computer use for studying English. Following this, items 42 and 43 asked if disc or web-based deployment of language learning content provides effective learning. As in 2004, Korean students were not widely exposed to CAI outside of the grade school environment, and there is evidence to suggest that students relied more on teacher-directed traditional learning (see Ahn, 2002; Eastmond, 2000; Joo, 1997; Min, et al, 2000). Students were also asked if they would like to combine traditional (i.e. paper-based) learning with computer use in item 44. The remaining items in this section, 45 through 53, concentrated on the bilingual functionality of software. This is important, as the majority of computer-based instructional material, particularly that produced by commercial software houses, neglects bilingual functionality. However, the multimedia-based CALL modules designed for this study offer various levels of bilingual support and functionality. The fundamental concerns of this survey section can then be seen to be CAI EFL learning activities and CAI EFL software preferences.

Section Two: Korean Learning Style

A). In-Class Relations

This section of the survey consists of items 54 to 57. In the creation and wording of these items, several assumptions were made based upon the 'traditional' view of the Korean cultural identity (see Finch 2000) and the East Asian classroom context (as per Cortazzi, 1990; and Hofstede, 1986). This view presents Korea as a very collectivist-based society, and therefore collective oriented learning, such as pair and group work, is perceived to be preferred over individual learning. Saving face is still important, particularly in public settings, such as being called upon by the teacher to speak aloud in class. Items therefore revolved around traditional characteristics of student-teacher classroom interaction, and student learning desires.

B). Desired Characteristics of Instructors

This section of the survey (items 58 to 61) focused on the traditional roles of teachers in Korean society. Questions centred on teacher actions and perceived responsibilities, such as knowing the subject they teach (being a 'master'), directing class learning rather than allowing for student suggested activities, and the level of teacher responsibility for the learning of students. Also asked was a question about whether it is important for the English language teacher to be an L1 speaker of English. Aspects of teacher dependency and any changes in Korean cultural assumptions towards educators were thereby considered.

C). View of Education

This survey section, consisting of items 62 to 67, centred on traditional perceptions of learning. Items concern importance of class exams, student preferred

methods of acquiring knowledge, the level of social status earned by education, and the importance of life-long learning. Central to these items is the view that Confucian consciousness maintains a stronghold over Korean students, even though a number of traditional cultural notions have been alleviated in the current generation of learners.

Section Three: English as a Foreign Language Learning Style

A) Preference for Cultural Representation

The two survey items, 68 and 69, are particularly relevant at this time as there is limited EFL course material available from within Korea that represents Korean cultural traits and identity (aside from that developed by the likes of Finch & Hyun, 2000). In recent years Korean researchers (such as Ahn, 2002) have recognized this, and have been calling for more Korean cultural representation in the EFL teaching materials of publishing houses (also see Pak, 1999). As a result, it is believed that students wish to see more of their own culture represented in the content of the materials they use to study English. How the representation of Korean culture in such content impacts student learning with the material is therefore at issue.

B). Loanword Use

This section examined the ease of learning and using English equivalents of Korean loan terminology when speaking in English. These items, numbered 70 to 73, are significant as these loanword types form the learning content of the multimedia-based CALL modules developed for treatment. Particularly under consideration was the student perception of the vocabulary applied in the Loanword Approach, with emphasis on the ease of learning and applying such material.

C). Vocabulary Acquisition Strategies

This section takes into account both meaning discovery strategies, and meaning consolidation strategies. Items stem predominantly from a questionnaire undertaken by Park (2001), with Korean EFL students, following a study undertaken by Schmitt (1997) with Japanese EFL students. These two studies are based on the creation of a taxonomic framework of vocabulary strategies deriving primarily from the Oxford Strategy Inventory for Language Learning (SILL). The meaning discovery strategies include analysing meaning (items 74 to 77), using aids (items 78 to 81), and help from others (items 82 to 86). The meaning consolidation strategies include social strategy (items 87 and 88), memory strategy (items 89 to 103), cognitive strategy (items 104 to 111), and metacognitive strategy (items 112 to 114). Attention of these survey items thereby resides firmly with vocabulary acquisition strategies, including the usual methods students rely on for determining the meanings of new words as well as the means employed to remember them.

Computers, Learning and Language Acquisition Survey

Student number   ……………………

Class number (UE106-26)   ……………………

Student gender (male or female) ……………………

INSTRUCTIONS

If you strongly disagree with the statement, please tick SD	SD ✓	D	A	SA
If you disagree with the statement, please tick D	SD	D ✓	A	SA
If you agree with the statement, please tick A	SD	D	A ✓	SA
If you strongly agree with the statement, please tick SA	SD	D	A	SA ✓

A. DISPOSITION TOWARDS COMPUTER ASSISTED INSTRUCTION (CAI)

1. COMPUTER COMPETENCY

(a) CAI usage

1	I use online learning	SD	D	A	SA
2	I use disk-based (CD/DVD) learning	SD	D	A	SA

(b) Skill level

3	I am competent in using computers	SD	D	A	SA
4	I am satisfied with my computer skills	SD	D	A	SA

2. PREFERENCE FOR COMPUTER-BASED LEARNING

(a) CAI usage

5	Computer technology should be used in my university classes	SD	D	A	SA
6	Computer technology should be used for university class homework	SD	D	A	SA

(b) Collaboration

7	I like to work on my own with computers in class	SD	D	A	SA
8	I like to work in pairs with computers in class	SD	D	A	SA
9	I like to work in groups with computers in class	SD	D	A	SA
10	I like to work on my own with computers outside class	SD	D	A	SA
11	I like to work in pairs with computers outside class	SD	D	A	SA
12	I like to work in groups with computers outside class	SD	D	A	SA

3. PREFERENCE FOR LEARNING ENGLISH THROUGH CAI

(a) CAI EFL activities

13	I like to use language games when studying English with computers	SD	D	A	SA
14	I like to use practice tests (TOEFL / TOEIC / TEPS) when studying English with computers	SD	D	A	SA
15	I like to use set syllabus modules when studying English with computers	SD	D	A	SA
16	I like to use grammar exercises when studying English with computers	SD	D	A	SA
17	I like to use listening tasks when studying English with computers	SD	D	A	SA
18	I like to use reading comprehension tasks when studying English with computers	SD	D	A	SA
19	I like to use cloze exercises when studying English with computers	SD	D	A	SA

20	I like to use matching exercises when studying English with computers	SD	D	A	SA
21	I like to use writing/typing tasks when studying English with computers	SD	D	A	SA
22	I like to use crossword puzzles when studying English with computers	SD	D	A	SA
23	I like to use pronunciation activities when studying English with computers	SD	D	A	SA
24	I like to use translation tasks when studying English with computers	SD	D	A	SA
25	I like to use test style exercises when studying English with computers	SD	D	A	SA
26	I like to use multiple-choice questions when studying English with computers	SD	D	A	SA
27	I like to use true/false questions when studying English with computers	SD	D	A	SA
28	I like to use question and answer tasks when studying English with computers	SD	D	A	SA
29	I like to use clue/guessing activities when studying English with computers	SD	D	A	SA
30	I like to use word search puzzles when studying English with computers	SD	D	A	SA
31	I like to use task-based activities when studying English with computers	SD	D	A	SA
32	I like to use colour coding activities when studying English with computers	SD	D	A	SA
33	I like to use reorganization activities when studying English with computers	SD	D	A	SA
34	I like to use semantic identification tasks when studying English with computers	SD	D	A	SA
35	I like to use negotiation exchange tasks when studying English with computers	SD	D	A	SA

36	I like to use mnemonics/keyword tasks when studying English with computers	SD	D	A	SA
37	I think computers can help me improve my English reading skills	SD	D	A	SA
38	I think computers can help me improve my English writing skills	SD	D	A	SA
39	I think computers can help me improve my English listening skills	SD	D	A	SA
40	I think computers can help me improve my English speaking skills	SD	D	A	SA
41	I want to use computers to study English	SD	D	A	SA

(b) CAI EFL software preferences

42	Using CD / DVD software is an effective way to learn English	SD	D	A	SA
43	Using the internet is an effective way to learn English	SD	D	A	SA
44	Learning English with computers is improved when combined with the use of a paper-based workbook	SD	D	A	SA
45	English language learning software instructions should include only English instructions	SD	D	A	SA
46	English language learning software instructions should include only instructions in Korean	SD	D	A	SA
47	English language learning software instructions should include both English and Korean instructions	SD	D	A	SA
48	English language learning software menu bars should include only English	SD	D	A	SA
49	English language learning software menu bars should include only Korean	SD	D	A	SA
50	English language learning software menu bars should include both English and Korean	SD	D	A	SA
51	English language learning software program icons should include only English	SD	D	A	SA
52	English language learning software program icons should include only Korean	SD	D	A	SA

| 53 | English language learning software program icons should include both English and Korean | SD | D | A | SA |

B. KOREAN LEARNING STYLE

1. IN-CLASS RELATIONS

54	I like to learn with a partner	SD	D	A	SA
55	I like to learn with a group	SD	D	A	SA
56	I feel nervous or ashamed to speak in class if the teacher calls on me	SD	D	A	SA
57	It feels like a test when the teacher calls on me to speak in class	SD	D	A	SA

2. DESIRED CHARACTERISTICS OF INSTRUCTORS

58	Teachers should know about the subject they teach	SD	D	A	SA
59	Teachers should direct the classes	SD	D	A	SA
60	The teacher is responsible for student's performance	SD	D	A	SA
61	My English teacher should be a non-native speaker of English	SD	D	A	SA

3. VIEW OF EDUCATION

62	Class exams are important	SD	D	A	SA
63	Memorizing knowledge is important	SD	D	A	SA
64	Practicing skills is important	SD	D	A	SA
65	Education is a way to achieve higher social status	SD	D	A	SA
66	The young should learn	SD	D	A	SA
67	It is important for me to study throughout my life	SD	D	A	SA

C. ENGLISH AS A FOREIGN LANGUAGE LEARNING STYLE

1. PREFERENCE FOR CULTURAL REPRESENTATION IN EFL LEARNING MATERIAL

| 68 | Seeing Korean culture in English language learning materials gains my interest | SD | D | A | SA |
| 69 | English language learning material should have more Korean cultural content | SD | D | A | SA |

2. LOANWORD USE

70	It was easy for me to learn to use direct loanwords (For example, words like 'coffee')	SD	D	A	SA
71	It was easy for me to learn to use the English equivalents of pseudo loanwords (For example, *close physical contact between friends* for *skinship*)	SD	D	A	SA
72	It was easy for me to learn to use the English equivalents of hybrid Korean-English terms (For example, *cherry tomato* for *bangul-tomato*)	SD	D	A	SA
73	It was easy for me to learn to use the English equivalents of truncated loanwords (For example, *remote control* for *remocon*).	SD	D	A	SA

3. VOCABULARY ACQUISITION STRATEGIES

(a) Meaning Discovery Strategies

(i) Analyzing meaning

74	To discover the meaning of unknown English vocabulary, I analyze parts of speech	SD	D	A	SA
76	To discover the meaning of unknown English vocabulary, I analyze pictures or gestures	SD	D	A	SA
77	To discover the meaning of unknown English vocabulary, I guess meaning from context	SD	D	A	SA

(ii) Using aids

| 78 | To discover the meaning of unknown English vocabulary, I use a bilingual dictionary | SD | D | A | SA |

79	To discover the meaning of unknown English vocabulary, I use a monolingual dictionary	SD	D	A	SA
80	To discover the meaning of unknown English vocabulary, I use word lists	SD	D	A	SA
81	To discover the meaning of unknown English vocabulary, I use flash cards	SD	D	A	SA

(iii) Help from others

82	To discover the meaning of unknown English vocabulary, I ask the teacher for the meaning	SD	D	A	SA
83	To discover the meaning of unknown English vocabulary, I ask the teacher for a synonym of the word	SD	D	A	SA
84	To discover the meaning of unknown English vocabulary, I ask the teacher for a sentence containing the word	SD	D	A	SA
85	To discover the meaning of unknown English vocabulary, I ask classmates or friends for the meaning	SD	D	A	SA
86	To discover the meaning of unknown English vocabulary, I use group activities to discover the meaning of a new English word	SD	D	A	SA

(b) Meaning Consolidation Strategies

(i) Social Strategy

87	I remember the meaning of English vocabulary by using the vocabulary with a group of classmates	SD	D	A	SA
88	I remember the meaning of English vocabulary by using the vocabulary in conversation with a native English speaker	SD	D	A	SA

(ii) Memory Strategy

89	I remember the meaning of English vocabulary by drawing a pictorial representation of it	SD	D	A	SA
90	I remember the meaning of English vocabulary by connecting the vocabulary to a personal experience	SD	D	A	SA

91	I remember the meaning of English vocabulary by connecting the vocabulary to its synonyms and antonyms	SD	D	A	SA
92	I remember the meaning of English vocabulary by grouping the vocabulary with similar words	SD	D	A	SA
93	I remember the meaning of English vocabulary by using the vocabulary in a sentence	SD	D	A	SA
94	I remember the meaning of English vocabulary by spelling the vocabulary	SD	D	A	SA
95	I remember the meaning of English vocabulary by listening to the sound of the vocabulary	SD	D	A	SA
96	I remember the meaning of English vocabulary by speaking the vocabulary aloud	SD	D	A	SA
97	I remember the meaning of English vocabulary by imagining the word forms for the vocabulary	SD	D	A	SA
98	I remember the meaning of English vocabulary by using keywords	SD	D	A	SA
99	I remember the meaning of English vocabulary by remembering the word's affixes and roots	SD	D	A	SA
100	I remember the meaning of English vocabulary by remembering each word's part of speech	SD	D	A	SA
101	I remember the meaning of English vocabulary by paraphrasing the meaning of the vocabulary	SD	D	A	SA
102	I learn the words of an idiom together to remember English vocabulary	SD	D	A	SA
103	I practice words using physical actions to remember English vocabulary	SD	D	A	SA

(iii) Cognitive Strategy

104	I practice words through verbal repetition to remember English vocabulary	SD	D	A	SA
105	I write words repeatedly to remember English vocabulary	SD	D	A	SA

106	I practice words using word lists to remember English vocabulary	SD	D	A	SA
107	I practice words using flash cards to remember English vocabulary	SD	D	A	SA
108	I study words by taking notes in class to remember English vocabulary	SD	D	A	SA
109	I utilize vocabulary sections in textbooks to remember English vocabulary	SD	D	A	SA
110	I practice words by putting labels on objects to remember English vocabulary	SD	D	A	SA
111	I keep a vocabulary notebook to remember English vocabulary	SD	D	A	SA

(iv) Metacognitive Strategy

112	I use English-language media to remember English vocabulary	SD	D	A	SA
113	I self-test word knowledge to remember English vocabulary	SD	D	A	SA
114	I continually review the same words over time to remember English vocabulary	SD	D	A	SA

THANK YOU VERY MUCH FOR TAKING THE TIME

TO COMPLETE THIS SURVEY

컴퓨터, 학습, 그리고 언어 습득 설문지

사무실용

학번   ....

학과 번호(UE106-26)   ....

학생 성별(남성 또는 여성)   ....

지시사항

	SD	D	A	SA
만약 여러분이 이 진술에 매우 동의하지 않는다면, SD 에 표시하십시오	✓			
만약 여러분이 이 진술에 동의하지 않는다면, D 에 표시하십시오		✓		
만약 여러분이 이 진술에 동의한다면, A 에 표시하십시오			✓	
만약 여러분이 이 진술에 매우 동의한다면, SA 에 표시하십시오				✓

		SD	D	A	SA
1	나는 온라인 학습을 이용한다	SD	D	A	SA
2	나는 CD/DVD 학습을 이용한다	SD	D	A	SA
3	나는 컴퓨터를 사용하는데 유능하다	SD	D	A	SA
4	나는 내 컴퓨터 실력에 만족한다	SD	D	A	SA
5	내가 다니는 대학 수업에서 컴퓨터 테크날러지(과학기술)가 사용되어야 한다	SD	D	A	SA
6	대학 수업 숙제 시 컴퓨터 테크날러지(과학기술)가 사용되어야 한다	SD	D	A	SA

7	나는 혼자서 수업 시간에 컴퓨터로 공부하는 것을 좋아한다	SD	D	A	SA
8	나는 짝을 지어 수업 시간에 컴퓨터로 공부하는 것을 좋아한다	SD	D	A	SA
9	나는 그룹으로 수업 시간에 컴퓨터로 공부하는 것을 좋아한다	SD	D	A	SA
10	나는 혼자서 수업 시간외에 컴퓨터로 공부하는 것을 좋아한다	SD	D	A	SA
11	나는 짝을 지어 수업 시간외에 컴퓨터로 공부하는 것을 좋아한다	SD	D	A	SA
12	나는 그룹으로 수업 시간외에 컴퓨터로 공부하는 것을 좋아한다	SD	D	A	SA
13	나는 컴퓨터로 영어 공부할 때 단어 게임을 사용하는 것을 좋아한다	SD	D	A	SA
14	나는 컴퓨터로 영어 공부할 때 TOEFL / TOEIC / TEPS 를 사용하는 것을 좋아한다	SD	D	A	SA
15	나는 컴퓨터로 영어 공부할 때 정해진 수업 진도 단원대로 사용하는 것을 좋아한다	SD	D	A	SA
16	나는 컴퓨터로 영어 공부할 때 문법 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
17	나는 컴퓨터로 영어 공부할 때 듣기 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
18	나는 컴퓨터로 영어 공부할 때 독해 이해력 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
19	나는 컴퓨터로 영어 공부할 때 빈칸 채우기 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
20	나는 컴퓨터로 영어 공부할 때 비슷한 단어, 문장, 뜻 등 서로 맞는 것끼리 연결하는 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA

21	나는 컴퓨터로 영어 공부할 때 쓰기/키보드로 타이핑을 치는 연습문제를 이용하는 것을 좋아한다	SD	D	A	SA
22	나는 컴퓨터로 영어 공부할 때 크로스워드 퍼즐을 사용하는 것을 좋아한다	SD	D	A	SA
23	나는 컴퓨터로 영어 공부할 때 발음 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
24	나는 컴퓨터로 영어 공부할 때 번역 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
25	나는 컴퓨터로 영어 공부할 때 시험문제 종류 같은 연습문제를 하는 것을 좋아한다	SD	D	A	SA
26	나는 컴퓨터로 영어 공부할 때 사지 또는 오지 선다형 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
27	나는 컴퓨터로 영어 공부할 때 진실/허위(맞는지/틀리는지)를 맞추는 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
28	나는 컴퓨터로 영어 공부할 때 질의 응답(묻고 답하는) 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
29	나는 컴퓨터로 영어 공부할 때 단서를 푸는/추측하는 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
30	나는 컴퓨터로 영어 공부할 때 단어 찾기 퍼즐을 사용하는 것을 좋아한다	SD	D	A	SA
31	나는 컴퓨터로 영어 공부할 때 실전에서 써 먹을 수 있도록 한 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
32	나는 컴퓨터로 영어 공부할 때 답을 푸는데 도와줄 수 있도록 명사는 파란색, 동사는 노란색, 목적어는 녹색등 단어에 색깔별로 표시해 놓은 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA

33	나는 컴퓨터로 영어 공부할 때 재조직 연습문제(섞어놓은 단어들을 한 문장으로 완성하거나 섞어놓은 단락들을 순서대로 나타내는)를 사용하는 것을 좋아한다	SD	D	A	SA
34	나는 컴퓨터로 영어 공부할 때 의미를 일치시키는 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
35	나는 컴퓨터로 영어 공부할 때 대화 속에서 상호교섭을 하며 의미를 알아내는 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
36	나는 컴퓨터로 영어 공부할 때 기억력/핵심어를 이용하여 연습문제를 사용하는 것을 좋아한다	SD	D	A	SA
37	나는 컴퓨터가 내 영어 독해 실력을 향상시키게 도와준다고 생각한다	SD	D	A	SA
38	나는 컴퓨터가 내 영어 작문 실력을 향상시키게 도와준다고 생각한다	SD	D	A	SA
39	나는 컴퓨터가 내 영어 듣기 실력을 향상시키게 도와준다고 생각한다	SD	D	A	SA
40	나는 컴퓨터가 내 영어 말하기 실력을 향상시키게 도와준다고 생각한다	SD	D	A	SA
41	나는 영어를 공부할 때 컴퓨터를 사용하고 싶다	SD	D	A	SA
42	CD / DVD 소프트웨어를 사용하는 것은 영어를 배우는데 효과적인 방법이다	SD	D	A	SA
43	인터넷을 사용하는 것은 영어를 배우는데 효과적인 방법이다	SD	D	A	SA
44	학습서 사용과 같이 결합하여서 컴퓨터로 영어를 배우면 향상된다	SD	D	A	SA
45	영어학습 소프트웨어 지시사항(사용설명)은 영어 지시사항(사용설명)만 포함되어야 한다	SD	D	A	SA

46	영어학습 소프트웨어 지시사항(사용설명)은 한국어 지시사항(사용설명)만 포함되어야 한다	SD	D	A	SA
47	영어학습 소프트웨어 지시사항(사용설명)은 영어와 한국어 지시사항(사용설명) 둘 다 포함되어야 한다	SD	D	A	SA
48	영어 학습 소프트웨어 메뉴 바(맨 위에 있는 도구 상자)는 영어만 포함되어야 한다	SD	D	A	SA
49	영어 학습 소프트웨어 메뉴 바(맨 위에 있는 도구 상자)는 한국어만 포함되어야 한다	SD	D	A	SA
50	영어 학습 소프트웨어 메뉴 바(맨 위에 있는 도구 상자)는 영어와 한국어 둘 다 포함되어야 한다	SD	D	A	SA
51	영어 학습 소프트웨어 프로그램 아이콘에는 영어만 포함되어야 한다	SD	D	A	SA
52	영어 학습 소프트웨어 프로그램 아이콘에는 한국어만 포함되어야 한다	SD	D	A	SA
53	영어 학습 소프트웨어 프로그램 아이콘에는 영어와 한국어 둘 다 포함되어야 한다	SD	D	A	SA
54	나는 파트너와 함께 학습하는 것을 좋아한다	SD	D	A	SA
55	나는 그룹과 함께 학습하는 것을 좋아한다	SD	D	A	SA
56	나는 수업시간에 이름이 불리어 말하면 긴장하거나 부끄러움을 느낀다	SD	D	A	SA
57	나는 수업시간에 이름이 불리어 말하면 시험을 보는 기분이 든다	SD	D	A	SA
58	선생님은 가르칠 주제에 관하여 알고 있어야 한다	SD	D	A	SA
59	선생님은 수업을 주도해야 한다	SD	D	A	SA
60	선생님은 학생의 성과에 책임이 있다	SD	D	A	SA
61	내 영어 선생님은 영어 원어민이 아닌 사람이어야 한다	SD	D	A	SA
62	학과 시험은 중요하다	SD	D	A	SA
63	지식을 외우는 것은 중요하다	SD	D	A	SA
64	실력을 쌓는 것은 중요하다	SD	D	A	SA

65	교육은 더 높은 사회적 지위를 성취하는 한 방법이다	SD D A SA
66	아이들은 배워야 한다	SD D A SA
67	일생을 통해 공부하는 것은 중요하다	SD D A SA
68	영어학습 자료에 담긴 한국의 문화를 보면 나의 관심을 끈다	SD D A SA
69	영어 학습 자료에 한국의 문화 내용이 더 있어야 한다	SD D A SA
70	내겐 영어 그대로 쓰이고 있는 외래어를 사용하는 것을 배우는 것은 쉬웠다(예. '커피' 같은 단어)	SD D A SA
71	내겐 잘못 쓰이고 있는 왜래어에 대한 영어 동의어를 사용하는 것을 배우는 것은 쉬웠다(예, '스킨십'은 '친구 사이에서의 가까운 신체 접촉')	SD D A SA
72	내겐 섞여 있는 한국어-영어 단어에 대한 영어 동의어를 사용하는 것을 배우는 것은 쉬웠다(예, '방울 토마토'는 '체리 토마토')	SD D A SA
73	내겐 줄여 쓴 외래어에 대한 영어 동의어를 사용하는 것을 배우는 것은 쉬웠다 (예, 리모콘: 리모트 컨트롤)	SD D A SA
74	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 품사(명사, 동사, 목적어 등)를 분석한다	SD D A SA
75	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 접사(접미사: instructor, happiness, 접두사: rewrite)와 어근을 분석한다	SD D A SA
76	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 그림이나 제스처들을 분석한다	SD D A SA
77	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 문맥 속에서 의미를 추측한다	SD D A SA
78	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 2 개국어로 쓰여진 사전을 사용한다	SD D A SA
79	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 1 개국어로 쓰여진 단어를 사용한다	SD D A SA

80	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 단어 목록을 사용한다	SD D A SA
81	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 플래시 카드(시청각 교육에서 순간적으로 학생들에게 보여 단어나 산수따위를 기억시키는 카드)를 사용한다	SD D A SA
82	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 선생님에게 의미를 묻는다	SD D A SA
83	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 선생님에게 그 단어의 유의어(비슷한 말)를 묻는다	SD D A SA
84	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 선생님에게 그 단어를 포함하고 있는 문장을 묻는다	SD D A SA
85	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 학과 친구나 친구에게 그 의미를 묻는다	SD D A SA
86	알지 못하는 영어 단어의 의미를 알아내기 위해서, 나는 그룹으로 나뉘어져 연습문제를 사용해 새로운 영어 단어의 의미를 알아낸다	SD D A SA
87	나는 그룹으로 나뉜 학과 사람들과 함께 단어를 사용해가며 영어 단어의 의미를 기억한다	SD D A SA
88	나는 영어를 쓰는 원어민과 나누는 대화 속에서 그 단어를 사용해가며 영어 단어의 의미를 기억한다	SD D A SA
89	나는 그림으로 묘사하여 영어 단어의 의미를 기억한다	SD D A SA
90	나는 개인적인 경험에 단어를 연관시켜 영어 단어의 의미를 기억한다	SD D A SA
91	나는 유의어 (비슷한 말)와 반의어(반대말)에 연관시켜서 영어 단어의 의미를 기억한다	SD D A SA

92	나는 단어를 비슷한 단어들끼리 그룹으로 나누어 영어 단어의 의미를 기억한다	SD D A SA
93	나는 문장 속에서 그 단어를 사용해 가며 영어 단어의 의미를 기억한다	SD D A SA
94	나는 단어를 써가며(말해가며) 영어 단어의 의미를 기억한다	SD D A SA
95	나는 단어의 소리를 들어가며 영어 단어의 의미를 기억한다	SD D A SA
96	나는 단어를 크게 말해가며 영어 단어의 의미를 기억한다	SD D A SA
97	나는 그 단어 대한 형태들을 상상해 가며 영어 단어의 의미를 기억한다	SD D A SA
98	나는 핵심어를 사용해서 영어 단어의 의미를 기억한다	SD D A SA
99	나는 단어의 접사 (접미사: instructor, happiness, 접두사: rewrite)와 어근을 기억해가며 영어단어의 의미를 기억한다	SD D A SA
100	나는 단어의 품사(명사, 동사, 목적어 등)를 기억해가며 영어 단어의 의미를 기억한다	SD D A SA
101	나는 단어 의미를 바꾸어 쓰며(말하며) 영어 단어의 의미를 기억한다 (I think 는 as far as I'm concerned 로 바꿔서)	SD D A SA
102	나는 영어 단어를 기억하기 위해 단어가 포함된 관용구(숙어)를 함께 학습한다	SD D A SA
103	나는 영어 단어를 기억하기 위해 신체 활동을 사용해서 단어를 연습한다	SD D A SA
104	나는 영어 단어를 기억하기 위해 말로 되풀이 하며 단어를 연습한다	SD D A SA
105	나는 영어 단어를 기억하기위해 단어를 반복해서 쓴다	SD D A SA

106	나는 영어 단어를 기억하기위해 단어 목록을 사용해 단어를 연습한다	SD D A SA
107	나는 영어 단어를 기억하기 위해 플래시 카드(시청각 교육에서 순간적으로 학생들에게 보여 단어나 산수따위를 기억시키는 카드)를 사용해 단어를 연습한다	SD D A SA
108	나는 영어 단어를 기억하기 위해 수업시간에 필기 해가며 단어를 공부한다	SD D A SA
109	나는 영어 단어를 기억하기위해 교제에 있는 단어 부분을 활용한다	SD D A SA
110	나는 영어 단어를 기억하기위해 사물에 쪽지를 붙여가며 단어를 연습한다	SD D A SA
111	나는 영어 단어를 기억하기위해 단어장을 계속 지닌다	SD D A SA
112	나는 영어 단어를 기억하기위해 영어로 나오는 대중매체를 이용한다	SD D A SA
113	나는 영어 단어를 기억하기위해 단어 지식을 스스로 테스트해본다	SD D A SA
114	나는 영어 단어를 기억하기위해 시간이 지나도 같은 단어를 계속적으로 복습한다	SD D A SA

설문지를 작성하는데 시간을 내주셔서 대단히 고맙습니다

APPENDIX THREE
THE PRE- AND POST-TEST

Pre- and Post-test Design and Delivery

The same assessor delivered both the pre- and post-test to students in the same location and at the same time during the weekly class schedule. The pre-test was delivered in the week following the survey (week five of the sixteen week semester), and the week preceding the start of treatment. The test of student understanding of pseudo-loanwords (SUPL) was collected immediately, and stored with survey data until being handed over to the researcher. The post-test was delivered in the same location and at the same time during the weekly class schedule as the pre-test. However, the post-test was delivered to all participants in the week seeing completion of treatment (week 12 of semester). The test was collected immediately upon completion and, along with the pre-test and surveys, passed on to the researcher so that data analysis could begin.

Multiple-choice item difficulty was varied by choice of pseudo-loanword, as well as the choice of English words used in test item statements, with particular care not to mix the level of difficulty within single items. By varying the closeness of meaning between distracters and the correct answer, it was easy to modify items to different degrees of difficulty (Nagy, Herman, & Anderson, 1985). When writing test activities, items were checked to ensure that they had only one correct response and were not interdependent. The order of correct responses was randomized so that test wiseness could be reduced. Further, distracters were developed that would be both plausible and equally appealing to students who would not know the correct answer. It was also important to consider the effect of student exposure to the pre-test when delivering the post-test. However, the period between delivery of each test was two months and it was therefore not perceived necessary to develop a second test instrument for the post-test. Location threat was diminished as both the pre- and post-test was delivered by the same instructor, in the same location, and at the same time of the weekly class schedule. As with the survey, the test underwent reliability and validity checks by trialling before final deployment, and Rasch analysis before use in hypothesis testing. Trialling would assist in accurately developing a reliable and valid instrument by ensuring the test was appropriate for deployment. Rasch analysis would assist in determining the reliability of the test, in terms of person item difficulty calibration, and validity by ensuring fit of the items to the model and thereby effective measurement of a single trait – student understanding of the English

meanings of pseudo-loanwords used in Korean. In this manner, reliable and valid test data was made available for hypothesis testing.

Pre- and Post-test Instrument

A bilingual (English and Korean) version of the instrument designed for use as pre- and post-test is below. Correct responses are illustrated in bold.

Quiz

학번 …………………
Student Number

학과 번호(ex UE106-26) …………………
Class Number (eg. UE106-26)

학생 성별(남성 또는 여성) …………………
Gender (male or female)

Test instructions

아래 나온 각각의 문장 속에 밑줄로 쳐진 단어가 있다. 각각의 단어에 대해 제시된 사지 선택 중에서, 답으로 가장 알맞은 영어 정의를 고른다.

In each of the sentences below there is an underlined term, this term is a 'pseudo loanword'. From the four choices provided for each term, select the definition that equals the English meaning for the underlined term.

1.	Your neighbor's <u>audio</u> is really loud; someone should complain to the police.		
Definition Choices			
a (1a)	shirt	c (1c)	noise
b (1b)	dog	d (1d)	**stereo**

2.	Kangnam is always a good area in Seoul to go <u>hunting</u>.		
Definition Choices			
a (2a)	sleeping	c (2c)	camping
b (2b)	**picking up people**	d (2d)	eating

3.	We need to get new batteries for the <u>remocon;</u> it doesn't seem to be working anymore.		
	Definition Choices		
a (4a)	brand of batteries	c (4c)	**remote control**
b (4b)	ready mixed concrete	d (4d)	a reverse cycle air conditioner

4.	I'd like to <u>Dutch pay</u> tonight.		
	Definition Choices		
a (6a)	**pay individually**	c (6c)	pay for everyone
b (6b)	share the cost	d (6d)	use Dutch money

5.	What <u>night</u> do you like the best?		
	Definition Choices		
a (7a)	**night club**	c (7c)	bar
b (7b)	Saturday	d (7d)	the opposite to day

6.	When she fell over, she landed on her <u>hip</u>.		
	Definition Choices		
a (8a)	front	c (8c)	top
b (8b)	**bottom**	d (8d)	back

7.	It is really hot in here; is there something wrong with the <u>steam</u>?		
	Definition Choices		
a (10a)	an angry person	c (10c)	water
b (10b)	engine	d (10d)	**radiator heater**

8.	The <u>sharp</u> is not in your pencil case.		
	Definition Choices		
a (11a)	pen that never runs out of ink	c (11c)	pointed paper
b (11b)	**mechanical pencil**	d (11d)	knife that can cut well

9.	Come in, and take a seat on the <u>sofa</u> over there.		
Definition Choices			
a (12a)	train station seat	c (12c)	**armchair**
b (12b)	love seat	d (12d)	place that is not near here

10.	I couldn't see anything because I needed a <u>flash</u>.		
Definition Choices			
a (13a)	**flashlight**	c (13c)	the sound of thunder after lightening
b (13b)	fresh batteries	4 (13d)	to move like a turtle

11.	I had to take good hold of the <u>handle</u> before I could get the car to turn properly.		
Definition Choices			
a (14a)	part of a machine used to turn it on and off	c (14c)	**steering wheel**
b (14b)	a person's ability to control a machine	d (14d)	the end of the arm

12.	Why do so many people blow their <u>klaxon</u> when driving in Korea?		
Definition Choices			
a (15a)	**car horn**	c (15c)	boat horn
b (15b)	siren	d (15d)	alarm

13.	He is a <u>talent</u> that is really very well known.		
Definition Choices			
a (16a)	a singer	c (16c)	an actor or actress
b (16b)	**a media celebrity**	d (16d)	an expert

14.	Your hands look really nice; you usually don't use <u>manicure</u>.		
Definition Choices			
a (17a)	**nail polish**	c (17c)	hand treatment
b (17b)	hand cream	d (17d)	cut and trimmed toenails

15.	I don't like the <u>potato</u> in this store; let's go to another place.		
Definition Choices			
a (18a)	**French fries**	c (18c)	toes
b (18b)	pots	d (18d)	hash browns

16.	Oh no, another mistake. I can't see why I just did that. Where's the <u>white</u>?		
Definition Choices			
a (19a)	ball point pen	c (19c)	the person a man marries
b (19b)	eraser	d (19d)	**correction fluid**

17.	She always goes on a <u>meeting</u>.		
Definition Choices			
a (21a)	**blind date**	c (21c)	promise
b (21b)	lecture	d (21d)	timetable

18.	Don't write with a <u>ball pen</u> please use a pencil.		
Definition Choices			
a (22a)	sharp	c (22c)	fountain pen
b (22b)	mechanical pencil	d (22d)	**ballpoint pen**

19.	Every weekend, my friends and I go out to a <u>hof</u> or two.		
Korean Term Choices			
a (24a)	amusement park	c (24c)	fast food chain
b (24b)	**bar**	d (24d)	cinema

20.	I really enjoyed meeting your boyfriend; he looks very <u>clean</u>.		
Definition Choices			
a (25a)	different from others	c (25c)	well mannered
b (25b)	**clean cut**	d (25d)	short hair cut

21.	Plug this into the <u>consent</u> over there.		
Definition Choices			
a (26a)	hole	c (26c)	water outlet
b (26b)	**electrical outlet**	d (26d)	wall

22.	If you are going to the store, please get me some more <u>skin</u>.		
Definition Choices			
a (27a)	body covering	c (27c)	body paint
b (27b)	**moisturizer**	d (27d)	shell

23.	He's really handsome; I can't believe he's still <u>solo</u>.		
Definition Choices			
a (28a)	a lemon flavored drink	c (28c)	**single**
b (28b)	short	d (28d)	married

24.	Everybody was <u>fighting</u> for their team at the soccer game last night.		
Definition Choices			
a (29a)	boxing	c (29c)	**cheering**
b (29b)	rioting	d (29d)	crying

25.	I'll need to buy a new <u>spring note</u> after winter because this one will be full.		
Definition Choices			
a (30a)	seasonal message	c (30c)	spring notebook
b (30b)	**spiral bound notebook**	d (30d)	spiral bound note

26.	I don't know why the coach hasn't called for a <u>member change</u> yet.		
Definition Choices			
a (31a)	time out	c (31c)	**substitution**
b (31b)	water boy	d (31d)	change of teams

27.	Be careful in this area otherwise you'll end up with a <u>punk</u>.		
	Definition Choices		
a (32a)	**flat tire**	c (32c)	person with long hair
b (32b)	pumpkin	d (32d)	damage

28.	I spend a lot of time training with the <u>sandbag</u>.		
	Definition Choices		
a (33a)	plastic bag	c (33c)	bag full of sand
b (33b)	beach bag	d (33d)	**punching bag**

29.	That company has an excellent reputation for <u>after service</u>.		
	Definition Choices		
a (35a)	**after sales service**	c (35c)	buying things after getting something free
b (35b)	expensive repairs	d (35d)	after selling service

30.	I like the <u>sand</u> type biscuits.		
	Definition Choices		
a (36a)	gritty textured	c (36c)	fine grained
b (36b)	smooth	d (36d)	**sandwich**

31.	I'm just going to the <u>super</u> for a moment.		
	Definition Choices		
a (37a)	street market	c (37c)	excellent
b (37b)	gym	d (37d)	**supermarket**

32.	Do you want to play a game of <u>pocket ball</u>?		
	Definition Choices		
a (38a)	**billiards**	c (38c)	fashionable clothing
b (38b)	ball you keep in your pocket	d (38d)	game like basketball

33.	I'll need to get a <u>driver</u> before I can help you repair it.		
	Definition Choices		
a (39a)	spanner	c (39c)	tool
b (39b)	**screwdriver**	d (39d)	shoe

34.	Looking at your car, I can see it needs a new <u>wheel cap</u>.		
	Definition Choices		
a (41a)	tire	c (41c)	distributor cap
b (41b)	baseball cap	d (41d)	**hub cap**

35.	He always wears a fashionable <u>y-shirt</u> when he goes out.		
	Definition Choices		
a (43a)	yellow shirt	c (43c)	**dress shirt**
b (43b)	white shirt	d (43d)	business shirt

36.	I will need to buy new <u>panties</u> on the way home tomorrow.		
	Definition Choices		
a (44a)	shorts	c (44c)	pants
b (44b)	**underpants**	d (44d)	outerwear

37.	Everybody, <u>one shot</u>!		
	Definition Choices		
a (45a)	**bottoms up**	c (45c)	taste
b (45b)	cheer	d (45d)	sip

38.	I love going <u>hiking</u> on the weekend.		
	Definition Choices		
a (46a)	mountain climbing	c (46c)	**biking**
b (46b)	driving	d (46d)	sailing

39.	I drank too much; I think I'm going to <u>o-bite</u>.		
	Definition Choices		
a (49a)	eat more	c (49c)	over bite
b (49b)	over eat	d (49d)	**vomit**

40.	Is your <u>a-pa-teu</u> nearby?		
	Definition Choices		
a (50a)	pull apart	c (50c)	put together
b (50b)	house	d (50d)	**apartment**

APPENDIX FOUR

THE CALL MODULES

Treatment

During the treatment phase of the empirical study, the two multimedia-based CALL modules were deployed on Compact Disc (CD). The two modules were distributed to students through a process of stratified sampling, based on class roll sheet order. The first student on the list was issued with module one, the second with module two, the third with module one, the fourth student with module two, and so on for each student in the class and for each of the classes in the study. In this manner, students were assigned to either treatment group one, with use of module one on CD 1, or treatment group two with use of module two on CD 2. Students then used the material as part of normal taught-course procedure over an eight week period (starting in week six of the semester). Each module provided around ten hours of learning content, and student progress was checked periodically to confirm scheduled progress and completion of appropriate activities.

The CALL modules used in treatment were primarily homework-based so they would not impinge upon existing syllabus schedules, thereby being less obtrusive and more easily implemented within the existing university English program curriculum. Further, as the modules were homework-based, this came to assist in minimizing instructor bias as treatment involved measuring performance of student linguistic understanding and development resulting from completion of material outside the classroom. However, student completion of the modules outside of class time could have lead to subject characteristic threats, whereby participants neglected homework completion or completed materials in one sitting, rather than throughout semester. These subject characteristic threats were reduced by implementing standard-practice controls (i.e. incremental homework submission due dates – three submissions in total, one every two weeks of treatment). The experiment was also confined to part of a single semester to reduce maturation and mortality, and control

of attitudinal effect stemmed from incorporating learning content as part of normal taught-course homework procedure. Through these actions, a course of reliable and valid treatment was provided to students throughout the empirical phase of the research.

Module Design

Characteristic Design Features – Behaviourist-Based Restricted CALL

To incorporate elements of the restricted CALL approach (see Bax, 2003) into a modern CALL-based learning system, the software was engineered while keeping five principles in mind. These principles are based on a number of instructional design principles, from the behaviouristic CALL phase, as presented by Atkins (1993) and Wyatt (1987). The features align with a traditional view of Korean education, a behaviourist-based transmission model, and learner expectations as based on the literature (Cortazzi, 1990; Eastmond, 2000; Finch, 2000; Hofstede, 1986; Joo, 1997; Min, Kim & Jung, 2000; Park & Oxford, 1998). Further, the presentation focus of the module comes to provide vocabulary exercises similar to those found in 'typical' language learning textbooks (refer to Chiquito, Meskill, & Renjilian-Burgy, 1997). The five principles behind the design are:

1.   Small, logically discrete, instructional steps

   A process of stimulus-response is relied upon to promote learning as student's complete tasks. For example, mutually exclusive exercises focusing on single option 'right/wrong' answers.

2. Rote style learning and memorization

   To assist with memorization, and to comply with the rote learning strategies of Korean students, tasks were oriented to present the material to be learned by emphasizing question-answer completion over full comprehension. For example, students are focused on answering items correctly. Schmitt (2000) also comments that rote memorization can be effective if this is the vocabulary learning strategy students are accustomed to using.

3. Transfer of information

   The computer takes on the role of an authoritative instructor, and learners are viewed as dependent. For example, the computer is used as a medium of information delivery and students are expected to assimilate this information.

4. Learning from repetition

   Students are passive responders as acquisition is based on student activated repetition and not practice. Repetition is the process of repeating the same solution over and over again, as opposed to practice which is viewed as the completion of an activity through a process of solution (Bernstein, 1967).

5. Emphasis on content

   Focus remains on completing the task, and obtaining the correct answer. For example, students are presented with the information they need to complete the task and are able to do so in a single step.

Characteristic Design Features – Communicative-Based Open CALL

Not only did elements of the open CALL approach (see Bax, 2003) need to be incorporated within the second module, they also needed to contrast the instructional design principles chosen for the first module. As a result, the following five principles, based on aspects of instructional design indicative of the communicative CALL phase, were selected (see Raschio, 1986; Underwood, 1984). In this regard, the pedagogical approach behind the module was intended to align with the communicative instructional style advocated by the Seventh National English Curricula. Further, the presentation focus of the module comes to provide vocabulary exercises in language puzzle form (see Backer, 1995). The five principles guiding this design (see Alessi & Trollip, 2001; Raschio, 1986; and, Underwood, 1984) are:

1. Broad all-inclusive instructional steps

   Exercises can be completed by applying cognitive rationalization to a task, with all possible solutions for current tasks self-contained within the presented exercise. For example, choices become evident as students progress through exercises as a result of the elimination of already used task items.

2. Application of understanding

   Focus on comprehension over completion, for example, students are expected to utilize cognition to solve puzzles and answer questions rather than just select answers.

3. Interaction with computer

   The computer facilitates learning, for example, students are presented with the information that they need to know, and the process of arriving at answers to questions involves a multi-step thought process.

4. Learning from game play

   Game play is used to motivate students to engage with the material. For example, progress toward learning goals is contingent on progress toward completing the game, or achieving the game's goals.

5. Emphasis on problem solving

   Learners are compelled to seek knowledge. For example, exercises are made challenging because information is hidden from the learner, or needs to be discovered.

Common Design Features

The two modules share several instructional design principles. It is these features that allow the two systems to facilitate language acquisition, and support learning through use of a multimedia environment. The three common design features are:

1. Assessment is embedded within an activity via immediate and extensive feedback

   Student responses are always judged, and appropriate response feedback is continuously provided by the system. Extensive feedback is provided through both

an auditory comment and a pop-up text balloon. In this manner, the system can illustrate if the answer is correct or not, and explain both the English and Korean usage and definition for the vocabulary item. This allows feedback to relate to learners' previous knowledge and experience, and serves to assist in establishing a mnemonic link between the vocabulary and the definitions in each language. This may also improve memorability of the content by capitalizing on the organization principle of memory (Alessi & Trollip, 2001).

The notion of feedback in language learning is based on an evaluation of success that can lead to learner self-correction, and allow learners to revise their strategies for language comprehension. Speed of feedback provided through computer-based systems is unmatched (Brett, 1995). Davies and Crowther (1995) also state that feedback can allow for students to understand their errors, develop further understanding from them, and provide "one-to-one tuition" that may not be possible in conventional learner settings. Oxford, Rivera-Costillo, Feyten, and Nutta (1998) also determine feedback to be an important form of learner "consciousness-raising," as do others such as Mayer (2001) and Soper (1997), while Schar, Schluep, and Schierz (2000) further state that the types of feedback provided through systems can come to affect the cognitive development of students within multimedia settings, with explicit learning fostered by delaying feedback until actions are completed.

2. Learner control over pacing and sequence; teacher control of content

Providing the learner with one-click system control and the ability to control activities establishes a fast pace, and can "appeal to a learner's sense of accomplishment and enhance fluency" (Alessi & Trollip, 2001, p. 187). Yet, Laurillard, Stratfold, and Luckin (2000) along with Schar, Schluep, and Schierz (2000) further make clear that when using CAI, it is the educator who needs to be

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accountable for establishing an atmosphere that maintains a specific learning focus, clear goals, motivation, and time for reflection so that structured and meaningful learning can occur.

Structured systems promote explicit learning (Schar Schluep, & Schierz, 2000), and structured learning allows for effective learner reflection (Guimaraes, Chambel, & Bidarra, 2000). To maintain the systemic use of language for both modules, it was essential that the learning material be teacher controlled via vocabulary pre-selection. The difficulty level of the content between modules also had to be constant, as the same pre-selected vocabulary items were used in each section and only applied differently based upon the activities found in each module (classify, multiple-choice, identify).

Further, in order to improve vocabulary learning, items were grouped by semantic and situation-specific similarity (see Underwood, Runquist, & Schulz, 1959). That is, financial and banking terminology were placed in the bank unit, restaurant terminology and food vocabulary grouped within the restaurant unit, and so on. Focus was placed on incorporating six terms per unit within the classify activity, five terms per unit in the multiple-choice activity, and five terms per unit in the identify activity. These vocabulary items were grouped by activity difficulty: classify section being the easiest; multiple-choice being harder; and, identify being the most difficult.

3. Proficiency built from the ability to engage in repetitive review

The limited number of items per activity (5-6) allow for each activity to be completed in a short period of time. The reason behind limiting the number of items per activity was to create a system in which students could engage in completion of activities quickly and conveniently. Efficient completion of activities also means that

the activity is compact enough for students to approach at any time and repeat for review. The structure of the modules (three activities per unit and twenty units per module, allows the longest activity to last no more than about five to ten minutes, and this helps in avoiding learner fatigue and boredom (Alessi & Trollip, 2001). Once an activity is complete, the score can be recorded. If the student desires, the process can be repeated, scores improved then saved. The ability to rework exercises in an attempt to improve upon previous performance provides all learners with the chance to succeed.

Choice of Lexical Content

The lexical content utilized for the purpose of promoting foreign language acquisition through use of the modules was obtained from previous research (see Kent, 1996) and stems from the English inherent within the native vernacular. The core linguistic content of the treatment comprised of a loanword vocabulary base of 220 words. This lexical base is comprised of 62 direct loanwords, 13 hybrid terms, three substitution terms, 136 pseudo-loanwords (52 truncated terms, 57 false cognates, and 27 fabricated loans), as well as five commonly misused English terms, (such as direct translation of *hong cha* (*red tea*) for *black tea*, and reversal of the set phrase *knife and fork* to *fork and knife*). However, it is the 136 terms present in the pseudo-loanword category that is under investigation throughout the study, and it is student learning gains associated with this category that the one-group pre-test/post-test experiment was designed to assess. Table A4.1 provides a listing of the loanword vocabulary found within the CALL modules. The language learning vocabulary has been sorted into loanword type, with the words in bold font representative of those used in the pre- and post-test. Each module employed the use of the same pseudo-loanword terms in each exercise. The pseudo-loanword terms used in each exercise

(classification, multiple-choice, or identification) are illustrated in Table A4.2.

Table A4.1

Listing of CALL module language learning vocabulary by loanword type

Misused English	Direct Loans	Hybrid Terms	Substitution Words	Pseudo-Loanwords (CALL Treatment Focus)		
				Truncated Loans	False Cognates	Fabricated Loans
Fork and knife	Aerobic(s)	Bae-kkob T	A-reu-bai-teu	**After (sales) service**	**Audio**	A-pull
Play	Airbag	Bang-ul tomato	Hotchkiss	Aircon(ditioner)	Back number	All back
Promise	Announcer	Beef kass	Snack	Ankle (length) boots	Bank	Back mirror
Red tea	Apple Pie	Com-maeng		**Apart(ment)**	Booking	Cash bank
Secret number	ATM	Don kass		Auto(matic motor)bi(ke)	Check	Cut line
Singing room	Ballad	Jeon-hwa box		Back(ground)	Chief	**Dutch Pay**
	Band	Jeon-hwa card		Back(ground) dancer	Cider	Egg fry
	Brand	Jeon-ja range		**Ball(point) pen**	Circle	Excellent bus
	Buffet	Ot-pin		Can(ed) coffee	Coffee pot	Eye shopping
	Café	PC bang		Cassette (player)	Condition	Gag man
	Cappuccino	Saeng beer		Classic(al music)	Confidence	Goal in
	Chain	Short dari		**Clean (cut)**	**Consent**	Gold collar worker
	Cheerleader	Sil-pin		(paper)clip	Cunning	Home service
	Coffee			(inferiority) complex	Cup	**Hop / hof**

Table A4.1(Cont.)

Misused English	Direct Loans	Hybrid Terms	Substitution Words	Pseudo-Loanwords (CALL Treatment Focus)		
				Truncated Loans	False Cognates	Fabricated Loans
	Cola			Co(o)rdi(nate)	Dash	**Member Change**
	Collar			DC (discount)	Dial	**One shot**
	Collect call			Demo(nstration)	Event	Open car
	Computer			Depart(ment store)	**Fighting**	PC banking
	Credit card			**(screw)Driver**	Fusion	**Pocket ball**
	Cut			Ex(ample)	Hamburger steak	Prima
	Date			**Flash(light)**	Hair iron	Salary man
	Dance			Frank(furter) sausage	Hard	Side brake
	Diet			Free (voltage)	**Handle**	Skin scuba
	Desk			Fry(ing) pan	Hand phone	Time killer
	E-Mail			Hamburg(er)	Health	Tough guy
	Gas range			Infla(tion)	**Hiking**	**Wheel cap**
	Graph			Kiss(ing) scene	Hint	Vinyl house
	Hacker			N/G (no good)	**Hip**	
	Hair Dryer			**Night(club)**	Hot dog	
	Hair pin			**O(ver)-bite**	**Hunting**	
	Handout			O(ver)coat	Interior	
	Handsome			Ome(lete)rice	Jelly	
	Headlight			One piece (dress)	**Klaxon**	
	Interphone			Owner (driver)	Light cable	
	Install			Perma(nent)	Maker	
	Keyboard			Phone(mee)ting	**Manicure**	
	Menu			Power (steering) oil(/fluid)	**Meeting**	
	Message			**Punc(ture)**	Omnibus	
	Mixer			Re(ady)mix(ed)	Parasol	
	Model			**Remo(te)con(trol)**	**Panty**	

Table A4.1(Cont.)

Misused English	Direct Loans	Hybrid Terms	Substitution Words	Pseudo-Loanwords (CALL Treatment Focus)		
				Truncated Loans	False Cognates	Fabricated Loans
	Napkin			**Sand(wich)**	**Potato**	
	Pitcher			Schedule(r)	Remake	
	Refill			Self(serve)	Report	
	Reporter			Sign(ature)	**Sand bag**	
	Restorang (French: restaurant)			Sign(ature) pen	Service	
	Romantic			**Spring(/spiral bound) Note(book)**	Setting	
	Shampoo			**Super(market)**	**Sharp**	
	Show			Telemark(et)ing	**Skin**	
	Sitcom			Three piece (suit)	Skinship	
	Ski			Trans(former)	**Sofa**	
	Stress			VTR	**Solo**	
	Soda			**Whi(te)-shirt**	Stand	
	Take out				**Steam**	
	Techno				**Talent**	
	Television				Training	
	Tennis				Volume	
	Top ten				**White**	
	Tire					
	Tour guide					
	Trousers					
	Tune up					
	Waiter					

Note. Words in bold are those used in the pre- and post-test.

Table A4.2

Pseudo-loanword terms employed in each exercise broken down by unit

Unit	Classification	Multiple-Choice	Identification
Career Center	Announcer	Back	Auto-Bai
	Gag Man	Chief	Back Dancer
	Gold Collar Worker	Clean	Driver
	Model	Sign	Gag Man
	Reporter	Skinship	Tour Guide
	Salary Man		
High-Tech	Com-Maeng	Audio	Audio
Center	Consent	Cassette	Com-Maeng
	E-Mail	Consent	PC Bang
	Hacker	Free	Remocon
	Install	Trance	VTR
	Light Cable		
Stadium	Aerobics	Fighting	Back Number
	Cheerleader	Health	Pocket Ball
	Goal In	Hiking	Running Machine
	Member Change	Sand Bag	Sand Bag
	Skin Scuba	Training	Ski
	Tennis		
Student	Ball Pen	Circle	A-Pull
Union	Desk	Cunning	Circle
Building	Graph	Hint	Cunning
	Handout	Report	Cut Line
	Hotchkiss	Sharp	Report
	Spring Note		
Vending	Can Coffee	Cider	After Service
Machine	Cappuccino	Condition	Ex
	Coffee	Confidence	Handle
	Prima	Cup	Note
	Red Tea	Prima	One Piece
	Soda		

Table A4.2(Cont.)

Unit	Classification	Multiple-Choice	Identification
Bank	365 Cash Bank	Bank	Clip
	ATM	Check	Hotchkiss
	Credit Card	Chief	Sharp
	Inflay	Secret Number	Three Piece
	PC Banking	Sign	White
	Percent		
Bus Terminal	Air Bag	Excellent Bus	Back mirror
	Open Car	Handle	Klaxon
	Power Oil	Klaxon	Mission Oil
	Tire	Owner	Side Brake
	Tune-up	Punk	Room Mirror
	Wheel cap		
Department Store	Ankle Boots	DC	Ankle boots
	Brand	Maker	Bae-kkob T
	Collar	One Piece	De-pa-teu
	Eye Shopping	Over	Museutang
	Trousers	Panty	Y-Shirt
	Y-Shirt		
Night Club	Dance	Booking	Hip
	Date	Dash	Hunting
	Live Beer	Hunting	Night
	One Shot	Meeting	O-bite
	O-bite	Promise	One Shot
	Pitcher		
Restaurant	Buffet	Cider	Beef Kass
	Don Kass	Fusion	Don Kass
	Egg Fry	Interior	Dutch Pay
	Menu	Self	High Rice
	Hamburger Steak	Service	Restorang
	Waiter		

Table A4.2(Cont.)

Unit	Classification	Multiple-Choice	Identification
Coffee Shop	Café	Interior	Aircon
	Dutch Pay	Jelly	High-Collar
	Napkin	Prima	Meeting
	Red Tea	Self	Short Da-ri
	Refill	Service	Time Killer
	Service		
Hair Salon	Cut	All Back	Clean
	Hair Dryer	Hair Pin	Hair Iron
	Hair Iron	Manicure	Handsome
	Perma	Setting	Manicure
	Shampoo	Skin	Perma
	Sil Pin		
Macteria	Apple Pie	Chain	A-reu bai-teu
	Cola	Cider	Hamburger Steak
	Hamburg	Hot Dog	Mania
	Home Service	Hamburg	Potato
	Potato	Potato	Punk
	Take Out		
Supermarket	Frank Sausage	Cider	Flash
	Fruit	Hard	Mes
	Remix	Remix	Spring Note
	Sand	Sand	Super
	Snack	Super	Wheel Cap
	Soft Drink		
Video Wall	Back Dancer	Ballad	Headlight
	Band	Classic	Keyboard
	Classic	Omnibus	Romantic
	Singing Room	Remake	Talent
	Techno	Talent	Volume
	Top Ten		

Table A4.2(Cont.)

Unit	Classification	Multiple-Choice	Identification
Entertainment	Kiss Scene	Audio	Event
	Performer	Cassette	Eye Shopping
	Play	Event	Hof
	Pocket Ball	Mellow	Human Drama
	Sitcom	No Good (N/G)	Sitcom
	Show		
Family &	Curfew	Back	Bi-nil House
Friends	Roommate	Clean	Cordi
	Short Da-ri	Complex	Ot-pin
	Skinship	Hip	Sign
	Stress	Solo	Sign Pen
	Tough Guy		
Kitchen	Fry Pan	Coffee Pot	Bang-ul Tomato
	Gas Range	Cup	Egg Fry
	Jeon-ja Range	Fork & Knife	Gas Range
	Knife & Fork	Kitchen Towel	Jeon-ja Range
	Mixer	Range	Omu Rice
	Percolator		
Telephone	Collect Call	Dial	A-pa-teu
	Hand Phone	Jeon-hwa Box	Hand Phone
	Interphone	Pon-ting	Menteu
	Jeon-hwa card	Schedule	Promise
	Receiver	Telemarking	Solo
	Message		
The	Computer	Audio	Complex
Household	Remocon	Cassette	Skinship
	Telephone	Flash	Sofa
	Television	Sofa	Stand
	Stand	Stand	Steam
	VTR		

The Shared Interface

Overall interface design is based upon the local cultural and contextual environment of the student, and presented in the form of a map. The initial start screen allows students to select from one of four locations: University, Main Street, Underground, or Apartment. After clicking on one of these options, a map of that location is presented. Each map presents five places and these places form the units of study, allowing the system to bring in realities from outside 'the classroom'. It is from here that communicative competence of students can begin to be addressed. Support for learning is provided through each module by enhancing motivation, promoting encoding and retention and the use of linguistic knowledge. Motivational factors are bolstered through attention (facilitated through design and selection of media use), confidence (facilitated through navigation and orientation support), and control (facilitated through a user friendly interface) (Alessi & Trollip, 2001). Encoding and retention are promoted through the interactivity of the language tasks available for practice. Learning strategies support is also provided through hypermedia systems, mostly through metacognition. "Metacognition is our awareness of our own cognitive processes, and includes reflecting, assessing, planning, and intentionally initiating cognitive activities" (Alessi & Trollip, 2001, p. 167).

The Units

A total of twenty units of study are contained in each module. The University section consists of career centre, high-tech centre, stadium, student union building, and vending machine units. The Main Street section consists of bank, bus terminal, department store, night club, and restaurant units. The Underground section consists of coffee shop, hair salon, macteria, supermarket, and video wall units. The

Apartment section consists of entertainment, family and friends, kitchen, telephone, and household units. Each of the four sections is shaded a unique colour; University is blue, Main Street is maroon, Underground is green, and Apartment is olive.

Each unit page, regardless of section, maintains an identical functional layout. To the top right of the display there are colour coded buttons to take students directly to the 'map' for each of the four sections, and a button to take students to a 'scores' section where they can view their progress and achievement with the material. Below this frame menu is an information panel that displays context sensitive data. This data changes based upon the activity displayed, and at the click of the three buttons next to the panel: 'overview' for an overview of the current activity; 'Korean' for translation of data displayed in the panel; and, 'instructions' for information on how to complete the current activity. Below the information panel are buttons that students can select to engage in the linguistic activities of the unit: 'classify'; 'multiple choice; and, 'identify'. Along the bottom of the screen is another frame menu containing seven buttons: 'help' for context sensitive procedural help for the unit; 'activity' indicating the current activity; 'navigation' a direct jump point to a full-screen menu containing each unit; 'reset' to reset the activity; 'grade' to grade and store the currently completed activity; 'answer' to show the answers for the current activity; and, 'exit' to close the program. These elements provide a user friendly interface since the buttons contain clear meanings, with appropriate confirmation of selection, and the use of tool tips (Alessi & Trollip, 2001).

Navigation

The central 'navigation' button at the bottom of each unit page provides students with access to a unit jump point. The jump point allows students direct access to any unit of the material, skipping the main section map pages, and so this

full-screen menu then acts as an anchor point. Each unit can also be accessed directly by selecting 'course maps' from the hierarchical bilingual menu bar, or by selecting one of the map buttons from the top right frame menu. The locus of control is firmly with learners as they are able to select the sequence and pace of their progression. This ease of orientation is not only important for navigation but comes to promote motivation and assists in promoting higher levels of concentration (Alessi & Trollip, 2001). Access to consistent global control throughout each module also affords students the ability to review material on demand through nonlinear hypermedia navigation. Repeating and reviewing material in this manner comes to aid metacognition and can facilitate encoding, recall, and comprehension (Alessi & Trollip, 2001).

Help

A tutorial for the program exists, and this is accessible from the program menu bar. In addition, a click of the help button on any page provides context sensitive aid. Depending on the user's system settings, this help will be in either the form of a text balloon pop-up or employ the use of an Agent. Merlin is one of four software technology Agents produced by Microsoft for use with the Windows operating system. If the operating system has this Agent installed, along with the accompanying text-to-speech engine, the help function of the modules will use this facility. In this case, the character Merlin will appear and will speak in English, as well as show this speech textually, and move to different sections of the interface to draw attention to specific areas. In this manner students maintain access to procedural assistance. Informational help on the content is consistently provided through the information textbox under the frame menu on the top right of the screen. Alongside the informational help textbox are three buttons that can provide context

sensitive information for the student based upon the activity currently selected.

Bilingual Functionality

Bilingual functionality is provided to students throughout the interface for program usability support. Context sensitive help functions are available in English or Korean, as are instructions for completing activities. The menu bar was designed so that it would be available in both English and Korean, while icons were constructed so that they would be in English first and auto-translate to Korean upon mouse-over. As a by-product, it is perceived that through the use of such bilingual items in language learning software, that students will begin to recognize the English associated with common software support functions, and be able to transfer the linguistic assimilation of such vocabulary to any English-only software packages that they may install on their home computer systems or later utilize within work environments.

Module Assessment

Students are able to keep track of their own progress and levels of achievement by accessing the modules 'scores' section. The scores section consists of five colour coded areas, one area to track activity completion and scores for individual units for each of the four map sections, and another area to record an overall achievement level for the program. Information regarding the student is displayed throughout this area and includes their name, student number, and class number. Several buttons are also provided to students in this section; 'disk' to send data to a diskette, 'erase' to erase the score data (by section or in entirety), 'print' to print the score information (by section or entirety), and 'computer' to import scores to the current computer. To prevent students from copying scores between each other and diskettes, a mechanism

was put in place so that only the student registered to use the software at the time of importing could import only their scores and no others. It was this diskette that was periodically submitted to verify student completion of the modules throughout treatment.

Submission of Material

To prepare material for submission students select 'export grades to A:' from the 'scores' section of the menu bar. The student scores are then saved to a diskette, and this can be verified by selecting 'view results on A:'. Students can also select 'import results from A:' if they are to use another machine to complete their homework. Alternatively, students could use the buttons found in the 'scores' section of the modules to import and export data to a diskette. As long as students had the module CD and a diskette upon which to store their grades, they could complete the activities from any location including university computer labs, an internet café, or a home computer. In this fashion, students were able to submit a diskette every two weeks. The diskette was then checked to see if students were on track with completion of activities and then returned. A separate utility was developed by the researcher to allow the native English speaking instructor deploying the material to check student completion of the homework activities. Participating students did not have access to this utility.

Module One Activities

The style of activities designed for module one are based on those found in typical language learning textbooks, and maintain a drill emphasis. Like those selected for module two, such activities are ones that students would find familiar. The activities for each module fall into one of three objective-based tasks –

classification, multiple-choice, identification.

Classification

In this section, the aim is to separate presented English direct and pseudo-loanwords by dragging and dropping the terms into one of two different baskets (English and Konglish). In this activity students are presented with a word list, which allows them to participate in the item selection step and sort through the words they know. Presenting a complete list of terms is common and useful, particularly for foreign language vocabulary items (Alessi & Trollip, 2001).

Multiple-choice

This activity follows the multiple-choice model closely. A pseudo-loanword vocabulary item is presented along with four choices of definition. One choice is the English dictionary definition, a second embodies the Korean language meaning while the two other choices are distracter definitions. Students are expected to differentiate between the Korean and English meaning for the term, and select the English definition. This type of question allows learners to draw on prior word knowledge, as students tend not to rely on random selection but select answers in vocabulary-based multiple-choice tasks due to association (Paul, Stallman, & O'Rourke, 1990).

Identification

These activities involve the matching of a single pseudo-loanword vocabulary item, from a five item word list, with a presented English definition. Although perhaps leading to initial errors, recall can be higher when students are presented with the definition, or 'confusable responses', in activities (Alessi & Shih, 1989).

Module Two Activities

The style of activities designed for module two are game-based. Like the activities selected for module one, the language puzzles found in module two are of the type students would find familiar. As both modules seek to use the same three objective-based tasks to promote learning, the second module also contains classification, multiple-choice, and identification activities.

Classification

As in module one, the aim of this activity is to identify direct English loanwords and pseudo-loanwords, and sort them into two categories. Again, as in module one, students are presented with a word list allowing them to participate in the item selection step and begin classification of the terminology mentally. However in module two, the students need to identify the term in one of two different word search puzzles, one marked 'English' and the other 'Konglish'. Students engage with the interactional puzzles in order to classify the terms, and if a term is selected correctly it is highlighted.

Multiple-choice

This activity follows the model of multiple-choice presented in module one but has been extended into a game-based format through the use of scrambled vocabulary. A scrambled pseudo-loanword vocabulary item is presented along with four choices of definition. One choice is the English dictionary definition, a second embodies the Korean language meaning, while the two other choices are distracter definitions. Students need to differentiate between the Korean and English meaning for the scrambled term, and are then expected to select the English definition. First, however, they must identify the term that they need to select the definition for, as this term is

the scrambled word. The aim is for students to unscramble the word based on the definitions presented and on prior-knowledge, in which case the pseudo-loanword definition may assist in unscrambling the term so that the English definition can be selected.

Identification

This activity follows that of the identification task found in module one, but it has been extended into a paired-associate task and made game-based through the use of clues. This activity involves the matching of dual vocabulary items, each from a five item word list, with a presented English definition that acts as the clue. Learning from such an exercise occurs in two stages involving response learning, where random errors may occur, and an associative stage in which responses are linked to correct stimuli with discrimination errors more common (Alessi & Trollip, 2001).

The Software (on DVD)

Data on Disc

The included DVD contains both multimedia modules (CD 1 and CD 2). The software distributed as CD 1 is housed in the Module One directory on the disc, and the software distributed as CD 2 is housed in the Module Two directory. Double-click 'curriculum.exe' in the respective directories to run the software. If the software runs slow from the disc, the directories can be copied to the hard drive root and run from that location.

Software Registration

On first use, the software must be registered, where you will need to enter a name, gender, student number, major, class number, year of study, and registration code. Any data can be entered into these fields, but the student number and registration code must be the same number.

System Requirements

Designed for: Pentium 4 with Hangul Windows XP, DVD-R drive (run from disc option), 155 MB free HDD space per module (run from hard drive option), 256MB RAM, 64MB VRAM, sound card and speakers.

Note. The software was developed during 2003, deployed in 2004, and although the modules run under Windows Vista (32-bit), the end user may experience some issues (e.g. freezing on item response or failure to load on execution). In such cases, the software may need to be run in compatibility mode or the system may need rebooting.