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박사학위청구논문

The Impact of Instructional Designs in Computer-Assisted Language Learning

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성신여자대학교 대학원

영어영문학과

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성명희의 박사학위 논문으로 인준함

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Chapter 1 Introduction

1.1. Problem

In these days of multidisciplinary research, keeping an open mind to the potential connections between seemingly disparate fields of study is necessary for delineating new approaches to old problems. In the area of second language acquisition, a sense of urgency emerges due to the high demand for English, the preferred form of modern global interaction and communication. A recurring problem in this area is the general ineffectiveness of traditional approaches to teaching, due to the lack of cohesive methods focused on student interaction in the target language. While many theories dealing with this problem focus on overturning the traditional dichotomy between a teacher and a student,

wherein a reversal of the typical active teacher / passive student roles occurs, the challenge of instituting methods which allow creative and generative dialogue in the target language still exists. This challenge becomes particularly critical when new and evolving technologies become the most viable vehicle for change.

In Korea, the lack of opportunity for true interaction in second language studies is significant; very few opportunities exist due to the homogenous nature of Korean society. One manner of addressing this problem is to focus research on Computer-assisted language learning (CALL), a method already extant in many Korean educational institutions. This focus on CALL becomes doubly important when the role the computer plays in the lives of the younger Korean generation is considered. As McLuhan stated in his 1964 "*Understanding Media*": "The Medium is the Message," meaning that the cognitive understanding of individuals is related to the medium through which they interact most comfortably. Given that this is the computer generation, and that most younger Koreans think nothing of spending a great deal of their time interacting through computers and thus experience the world more visually, using methods that incorporate computers to enhance interaction in the target language can only benefit

learners of a second language in Korea while addressing the lack of authentic situational experiences. The challenge begins with creating programs that not only follow the curriculum, but appeal to the sensibilities of the average Korean student.

1.2. Purpose

While organizing CALL within a framework that effectively takes advantage of student sensibilities has become the core focus of many research programs, few are intent on utilizing existing behaviors and expectations of Korean students to improve language teaching. Applying a behaviorist model to the specific Korean situation can help to solve some of the problems endemic to the Korean context. Instructional Design Theory, based collectively on what we know about learning theories, information technology, systematic analysis and management methods, offers many valuable tools for shaping such a research project.

Instructional Design reveals its importance and adaptability not only in its varied theoretical and practical components; but also effectively addresses the notion that how one teaches can have a

significant influence on the effectiveness of student learning. Therefore, Instructional Design is able to accommodate the testing of various language teaching theories. The purpose of developing the *Invitation to Screen English* program is to make a more effective and communicative multimedia software package. Multimedia was chosen to not only appeal to Korean students, but to remain true to an interdisciplinary approach and the precepts of Instructional Design. Creating a model that takes advantage of the best of what language theorists offer incorporated within effective technology is an avenue worth pursuing.

As language acquisition theorist Krashen (1977) emphasizes, the importance of comprehensible input in second language acquisition is paramount; as such, using a computer reduces teacher errors and uses authentic language. A further benefit is that a computer can sustain more comprehensible input for Korean language learners since it corresponds to a familiar form of interaction. In Krashen's input hypothesis theory, acquisition and learning are two different processes. When students are acquiring a language, acquisition occurs naturally and unconsciously while learning assumes a conscious monitoring role.. Criticisms of this distinction abound, yet one lasting aspect of the

theory is that of the affective filter. The term was made popular by Krashen in his Monitor Theory. Experiments demonstrated that learners do not learn well when they are affected by negative feelings such as boredom, anxiety or low self-esteem. According to this hypothesis these negative emotions activate a filter that prevents efficient processing of the learning input. On the other hand, Swain (1985) argued that output also had a role in second language acquisition and thus the importance of creating a model that tests and incorporates both input and output modes. This forms part of the basis for the development of the *Invitation to Screen English* program. Thus, the goal of this study is to determine the applicability of Instructional Design Theory to the creation of software programs that enhance the learning experience of Korean students.

1.3 Outline

For the current project, three CD ROMs were created and tested which emphasized different Instructional Designs. The first one was mechanical (MI); the second communicative (CI); the third meaningful and communicative (MCI). The comparison of these three CD ROMs

will show the usefulness of Instructional Design for creating effective methods for teaching second language in Korea.

Before studying the three different module CD ROMs, a review of SLA (Second Language Acquisition) theories and their applications to CALL in the context of an interdisciplinary perspective was undertaken, including analysis of common typologies and terminology in CALL. Particular focus on Kemmis (1977)' typology of CALL and its applications was undertaken and is discussed in Chapter 4. Relations of these theories to ICALL and Expert System are examined in the section on further studies. Initial analysis of results cover the more interesting factors to emerge when applying the theory to various situations. Possibilities for improvement are presented.

The first example (herein referred to as Indecent Proposal I (MI)) had the students watch a video followed by a *dictation drill* for which they had the translation. Vocabulary was shown on the screen and a *comprehension check-up* followed. The second example (herein referred to as Indecent Proposal II (CI)) is an input-oriented program. After watching the movie with sound, the students were shown vocabulary with definitions. The students then did a *dictation drill,* for which they were given feedback. This was followed by a vocabulary

practicing dialogue. Finally, a *comprehension check-up* ends the test, during which Microsoft agent Genie, an Artificial Intelligence program, gave feedback for student responses.

The third module of the CD ROM (herein referred to as Indecent Proposal III (MCI)) is more interactive. MCI was realized using the same AV material as CI. Using this CD, the students first watched the video with sound. They then watched the video for the second time without sound. They were asked some simple questions to skim the contents of the sequence. Next was the study of the vocabulary of the sequence and its meanings. Students repeated the vocabulary and pronunciation as part of this sequence. Another *dictation drill* followed, for which the students were given feedback. After the *dictation drill*, *oral practice* followed. Here the students assumed the persona of the characters in the play (e.g., Demi Moore or Robert Redford). Students repeated the text and followed up with a *comprehension check-up*. If the students had all the answers correct, they continued with more difficult questions. If the students had half the answers correct, they then followed up with some easy short answer questions. If the students had no answers correct, they returned to the vocabulary segment of the

sequence. After the *comprehension check-up*, vocabulary learning with practice followed and then a *role-play.*

Creation of specific English Education Software named *Invitation to Screen English* was undertaken for this project. This software is designed to be an effective and interesting multimedia program for teaching an accompanying textbook, *Invitation to Screen English*, which was used as a textbook for minor English language lab and Screen English courses respectively. Evaluation of the contents of this software based on language acquisition theories and effective teaching methodology and syllabus design followed. Indecent Proposal I is mechanical; Indecent Proposal III is more interactive than Indecent Proposal II. Indecent Proposal II is an input-focused program, while Indecent Proposal III is an output-focused program. The comparison of these two programs will show the effectiveness of a comprehension-oriented program and production-oriented program. In other words, we can compare results to determine whether an input or output based program, or a combination of both, is more effective to increase student acquisition of target language.

Research was conducted with two-year college students attending the English language program at a Korean two-year college, following

three different instructional designs (MI, CI, and MCI). Pretest and post-test models were executed before and after viewing the AV material *Indecent Proposal*. Analysis of data is quantitative and qualitative. The result indicated that MCI is more effective than MI.

This study showed how Instructional Design influences second language acquisition, specifically, how Instructional Design can be used to create better interactive CD ROMs for language acquisition. As the combination of well-grounded theory and technology can develop good intelligent computer-assisted language learning software, instructional design built upon the characteristics of the learner and learning strategies will have a significant influence on the effectiveness of learning.

Chapter 2 Literature Review

2.1. Classroom Dynamics and Monitor Theory

Traditionally, a classroom is conceived as a venue for the transmission of knowledge, passing from the holder (teacher) to the receiver (student). On the surface, it can be said that most language theory within the past 30 years has occurred in the spirit of challenge to that mold. Yet theorists were mostly forward looking. To undo the errors of the past required a denunciation of previous methods and theories, and research was directed towards creating a new and effective program for second language learning. Hence, beginning in the 1960's and early 1970's, a movement to create a teaching environment that allowed students to not merely be receiving vessels, but active, independent negotiators of knowledge arose.

Krashen's (1977) early distinction between acquired and learned knowledge is a case in point. Krashen claims that acquired language was similar to knowledge acquired by children learning their first language, or L1. He contrasted this with learning, which amounts to effective filters instilled through education, which serve as editors on a

student's spoken forms. Examples of these would be grammatical rules and the recognition of socially acceptable patterns of speech. Krashen went on to state that students attempting to learn a second language, or L2, were in fact impeded by these editors, and that more natural situations where acquisition similar to L1 situations were needed to ensure fluency in L2. What was required to achieve this was a rethinking of the classroom dynamic and modes of teaching.

While critics largely condemn his distinction as lacking empirical validity (McLaughlin, 1987), in the field of linguistics, especially Second Language Learning, Krashen has had a lasting influence. This is due to the critical shift in the view of the student, who was now seen as an active, participatory entity, capable of generating her own competency in L2 through negotiation, as opposed to relying on methods based on forcible imposition. An extension of viewing the student as an active, participatory entity is the need to consider exactly who the student is; their backgrounds, their expectations, or, in Krashen's words, their Affective Filters.

Affective filters for Krashen were basically emotions that impeded the acquisition of L2. Although Krashen saw this as limiting potential, for the teacher it can in effect provide a means to enhance a

student's learning through consideration and analysis of what those filters may be. Taking the broadest sense of the term, filters can also be understood as not only emotional, but cultural and communicative as well. In the case of the younger Korean generation, it then becomes necessary to evaluate commonalities in cultural experience and modes of communication. When doing so, the importance of computer technology for younger Korean learners becomes apparent; thus the need to develop a program that integrates this medium into language learning classrooms.

The Input Hypothesis in a broad sense is another aspect of Krashen's theory that is applicable to this study. Krashen emphasized how input for L2 learners needed to be comprehensible and be a level above the student's understanding, a concept he termed i+1. If the level is too high, say i+7, the input is incomprehensible to the student and effectively useless. While this may seem self-evident, it is the idea of comprehensible input itself that is of interest. Making input more comprehensible should be a serious consideration for all language teachers, and as such analyzing a student's culture and expectations can make this consideration easier. Understood in these terms, Korean students' affinity for computers and audio-visual stimulation

underscores the importance of conducting research similar to that proposed herein.

2.2. Authentic Language Input and Output

Input

Input must not only be comprehensible; it must also be authentic, that is, similar to actual language used in actual social situations. If indeed Krashen was correct in assuming that a beneficial way for a learner to acquire an L2 is through real life situations just as children learn their L1, the challenge then becomes how to incorporate authentic language input into the medium of CALL within the framework provided by Instructional Design. Before addressing this aspect of the research, the question of what exactly authentic language is needs to be examined.

Authentic language is probably most easily understood as being utterances in a learner's L1, and can be found in materials that have been produced to fulfil some social purpose within the language community (Peacock, 1997). In other words, authentic materials are

all materials created for native speakers of the L2. Selection of materials is where issues arise: materials should be understandable, but slightly above a student's level (Krashen, 1984). However, cultural differences must also be considered in the choice of materials, since material should not be too biased, too difficult to explain, or to understand (Gardener & Miller, 1999; Martinez, 2002). Choice of material should also consider the cultural expectations and background of the student, which includes but is not limited to social background, intended instrumental use of the L2, and mediums in which the student is comfortable interacting. This last affects how the material is presented to the student. When teachers select materials, they also have an opportunity to ensure that the material chosen is error free, thus ensuring accurate L2 acquisition.

Material however, should not be so watered down so as to be overly simplistic; this is a great disservice to students, especially if they intend to use the language in meaningful communication with native speakers of the L2. Having some reference points for proper cultural understanding and referencing only aids the student in potentially facilitating communication. Some culture relevancy must therefore be admitted to ensure useful and generative acquisition. In this vein,

the material in the *Screen English* program was chosen to meet these criteria: scenes from Indecent Proposal were chosen for simplicity, interest to the target audience studying the L2, and usefulness of language.

Output

A major problem faced by all language instructors is not simply ensuring that students have comprehensible input, but that they have the opportunity to practice their acquired speech to reinforce learning and self-evaluation, or self-assessment. As many researchers have pointed out, self-assessment is an important aspect of learning (Heidt, 1979; Heilenman, 1991; Henner-Stanchina & Holec, 1985). Analysis of output is a means not only for a student to conduct self-assessment, but offers the sole vehicle for a teacher to conduct evaluation of the student's progress or the success of a research programme. Creating comprehensible output then can be understood as an essential goal of learning a language. A program of study then should not only ensure that appropriate and useful comprehensible input is in play, but that

students also have a means for comprehensible output, for their own self-evaluation and objective analysis.

Swain argued in her Comprehensible Output Hypothesis that learners must also produce comprehensible output in order to reinforce their acquisition (Swain, 1985, 1995). To paraphrase, in order to produce new language that is accurate, a student must also engage in comprehensible output and internalize corrections offered by the teacher or artificial intelligence as the case may be.

This task becomes exceptionally daunting when coupled with how infrequently students actually speak in a classroom. Ellis, Tanaka, and Yamazaki (1994) and Pica (1988) among others have all confirmed that there exists a scarcity of comprehensible output from students when engaged in L2 acquisition. One manner to overcome this is to have the student engaging within a medium in which they are comfortable; again, in this case, that being for Korean students, computers.

2.3. Instructional Design

Many of the language theories discussed so far propose alterations to the traditional behaviour of students in a classroom; the underlying assumptions are that students are best off engaging in situational contexts that mimic those of authentic L2 language use. Students are in fact active participants when they engage in language learning and thus they are in fact acting, doing. Theories that do not offer valid courses of action for the student to become involved in are thus inadequate. In this vein, using a behaviourist model that allows the most systematic analysis of the student's needs and expectations while remaining true to curriculum and practical requirements needs to be examined. Instructional Design theory provides such a model.

According to Reigeluth (1999, 6-7), Instructional Design-Theory is focused on the means whereby given goals are attained, through the identification of appropriate methods of instruction, which are broken down into component parts and taught separately. Instructional Design begins with the precept that effective learning begins with the observable behaviours of the subject; that by analysing what the learner does, a more efficient method for learning can be created (B.F. Skinner,

1957). The subject is viewed as an active agent, who through the use of tools, instruments, or media, acquires new learning and skills. The design and implementation through a medium thus becomes the main concern for Instructional Designers.

In the creation of a method to focus the behaviour of the subject, the manner of doing something will determine how well the subject learns how to do it (Chandler & Sweller, 1991; Sweller & Cooper, 1985, Cooper & Sweller, 1987). As such, different formats need to be tested so as to eliminate ineffectual or redundant tasks. In consideration of the above, Instructional Design serves well since Korean students have an affinity for computers, thus increasing the chance of positive and effective responses to methods based on the use of this medium.

Most Instructional Design models begin with what is known as the ADDIE model. ADDIE stands for:

Analyze: learner characteristics, tasks to be learned

Design: choose objectives, choose an instructional approach

Develop: instructional or training materials

Implement: the instructional material

Evaluate: the success of the program

Analyze

In the research herein, students attended a two year course of study at a two year college Korea. Students were generally between 19-24 years of age, and were enrolled in the English program from 2004 to 2005.

For a number of years, Korea held the top spot for high speed internet provision rate (KITA, 2004). Korean student affinity for a computerized virtual world can be found in their love of Cyworld: "an astonishing 90% of South Koreans in their 20's use (Cyworld)" (Business 2.0 CNNMoney, June 14 2006, *The Future is in South Korea*). Since visiting Cyworld is a regular habit for most South Koreans in their 20's, graphic representations on Cyworld can be said to be representative of what this group finds attractive, those being predominately termed 'cute' and 'adorable' images. This trend to view cuteness attractive can be found in myriad examples of Korean pop culture and cultural materials, and as such is an aspect that must be considered when implementing or creating materials for CALL. That said, the obvious 'hyperwired' aspect of Korean society and the huge percentage of South Koreans in their 20's spending large amounts of

time in front of a computer demands that research continue in the field of CALL and Instructional Design.

Design

An article written for the Asia Times states that: "The Bank of Korea estimates the private English education market accounts for 4 to 5 trillion won, along with expenses of up to 68.4 billion won for studying for TOEIC and TOEFL (Test of English as a Foreign Language) exams" (Asia Times, Nov.30, 2005, *Life and Death Exams in South Korea).* The demand for English education is Korea is extremely high; such high demand creates a need for a large number of competent, qualified instructors. Korea is a very homogenous country, with approximately 98% of the population being ethnically Korean and speaking the native Korean language. This leads to a situation were few local English language teaching experts exist. Demand outstrips local resources to such an extent that a large number of native English speakers have been invited to South Korea to work in a plethora of colleges, universities, private companies and institutes. This demand has become especially acute with the government's recent decision to

hire over 10,000 native English speakers for positions within the public school system. A major rationale for hiring so many foreign experts is that they provide authentic language and situations that students can learn from, thus aiding in the creation of more local experts. One way to alleviate the problem of the lack of qualified English instructors while providing authentic comprehensible input is to focus research on CALL in the search for an effective instructional approach.

Develop

The *Invitation to Screen English* program was developed in this atmosphere while attending to guidelines found within the various language theories already discussed. Specifically, student analysis demonstrates an affinity for computer technology and, thus, due to high demand for English and the lack of competent English instructors, computer technology becomes a viable response to the situation.

Language used in real life is the target to be acquired. Students need error free authentic input that is not just culturally relevant, but practically relevant as well. Students also require a means for expressing comprehensible output, for self-evaluation and teacher-

evaluation purposes. As such, sufficient basis exists for using CALL and language theory in the creation of a program for language learning. The development of the *Invitation to Screen English Program* aims to address all these concerns, and is dealt with at length in section 2.5

Implement

Implementation and testing occurred at a two year college in Korea, in the courses *Invitation to Screen English* and *English Listening Lab*. Detailed discussion occurs in Chapter 4.

Evaluate

Evaluation indicated that the most marked improvement in the English skills of students occurred when using the MCI model. Further discussion is presented in Chapter 5, Results and Discussion. Constituting the focus of this research, the instructional designs are elaborated on in Chapter 4.

2.4. Artificial Intelligence (AI)

One area mentioned previously that requires further elaboration is the presentation of error free input and the creation of comprehensible error-free output. A teacher's role is to ensure this occurs, yet two issues can impede this process: the number of students in a typical classroom, which limits the teacher's ability to help all students equally; and the lack of instructors to meet demand. Developments in artificial intelligence offer potential solutions to these issues.

The term *AI* was coined by a computer scientist at MIT, but there remains controversy surrounding the idea of whether or not intelligence can be given to a machine. Given the current situation of English education in Korea, and that the goal of Artificial Intelligence is to develop an expert systems which solve problems that require specialized human skills, developments in expert systems that can complete similar functions as the language teaching expert are worth examining. In this research, the program Microsoft Genie was included for this purpose. It specifically was chosen for its adaptability and ease of programming, as well as carrying some weight with Korean students due to its potential 'cute' factor.

2.5. CALL within the framework of Instructional Design

Teachers have intuition regarding how language acquisition works from observation and teaching experiences. This intuition is put to the test when using CALL in language acquisition due to the relative novelty of this discipline and the rapid advancements that have occurred (Levy, 1997, p. 1). Doughty did not compare or show preference towards a specific theory when applying Second Language Acquisition theory to CALL (Doughty, 1991). This emphasizes the potential difficulties of making and identifying CALL theories. A further problem stems from the fact that in language teaching, researchers explain theories using the scheme of linguistics and cognitive science; therefore, it is difficult to apply these theories to real situations within CALL. Despite these hazards, the need for research in CALL has been established and has a proven track record. The onus is now on creating specific programs that succeed within the Korean context.

Input

Since input needs to be comprehensible, authentic, and applicable to a learner's background and practical needs, material for the *Invitation to Screen English Program* was taken from a popular American movie, *Indecent Proposal*. Particular scenes were chosen due to their practical applications, in that they offered examples of negotiation and discussion of ethical values. The movie caused controversy and generated a sizable amount of public discussion in the United States, and its popularity was widespread.

For input, the student is allowed to watch segments of the movie; pretest material varies depending on the type of method being tested, whether MI, CI, or MCI. Specifics can be found in Chapter 3 and Chapter 4.

Output

Having established the need for comprehensible output, several methods have been incorporated for testing purposes. Dictation, role-

play, comprehension check up exercises, and fill in the blank activities, are evaluated. For further discussion, refer to Chapter 3 and Chapter 4.

2.6. Kemmis typology of CALL

Kemmis(1977) has employed a typology for CALL characterized as instructional, revelatory, conjectural, and emancipatory. Instructional CALL means examining learning information and what students/absorbers remember. This is giving content, giving assignments, and it is similar to the tutor model. Revelatory CALL is when student/'experiencers' engage in mock experiments modeled on real situations to develop linguistic experience. This activity examines how student/'experiencers' simulate knowledge. In this case, learning is through exploration and discovery in simulation. In terms of the computer, it shows what is important to learners and in terms of learners it can narrow the distance between the structure and the principle of knowledge. Through the interaction with the computer, concepts are revealed and discovered slowly. It is a good example of inductive learning. Conjectural CALL is for student/explorers to complete the task through trial and error. Emancipatory CALL is language use in real-life

situations. For example, real use of language where students express their own ideas. They are practitioners. It is different from absorbers, experiencers, and explorers.

2.7. Behaviorism & Constructivism

Language is a fundamental part of total human behavior. The behavioristic approach focuses on the immediately perceptible aspects of linguistic behavior. Effective language behavior is the production of correct responses to stimuli. If a particular response is reinforced, it then becomes habitual, or conditioned. One can comprehend an utterance by responding appropriately to it and then receiving positive reinforcement for that response.

Skinner's (1957) theory of verbal behavior was an extension of his general theory of learning by operant conditioning. According to Skinner, verbal behavior, like other behavior, is controlled by its consequences. When consequences are rewarding, behavior is maintained and is increased in strength and perhaps in frequency as well. When consequences are punishing, or when there is a total lack of

reinforcement, the behavior is weakened and eventually extinguished (Brown, pp. 22-23).

Mechanical Instructional Design is based on behaviorism. Students repeat dialogue. The teacher is master and sets the direction.

Ellis (1997) states that language learning is like any other kind of learning in that it involves habit formation. Habits are formed when learners respond to stimuli in the environment and subsequently have their responses reinforced so that they are remembered. Thus, a habit is a stimulus-response connection (Ellis, 1997, p. 31)

Mechanical instruction gives dictation drill first and repeats the dialogue. If students do not know the answer, then the teacher supplies it. Therefore, it is habit forming.

According to Dewey and Knowles, constructivism is a type of collaborative learning in which the instructor facilitates peer interaction via working with known concepts. The “peer’s” learn through interactive means: hearing, speaking, and reading. The collective knowledge of the peers and instructors is the basis of how information can be.

Knowles theory on andragogy explains the fact that teachers or instructors are not sole possessors of knowledge and perspective but also co-learners and guides (Boettcher, 2007).

Meaningful and communicative design is based on constructivism. Teacher is not only possessors of knowledge but co-learners and guides.

2.8. Communicative Language Teaching

According to Stephen Krashen's Input hypothesis, L2 acquisition takes place when a student understands input equal to i+1. When exhibiting the video, the genie gives the storyline. That input contains grammatical forms that are at 'i+1'. (Its goal is to achieve a level that is a little more advanced than the current state of the learner's inter-language). According to Krashen (1977), L2 acquisition depends on comprehensible input.

Within the last quarter century, communicative language teaching (CLT) has been put forth around the world as the *new* or *innovative* way to teach English as a second or foreign language. Teaching materials, course descriptions and curriculum guidelines proclaim the goal of communicative competence. To develop students' ability to understand

and to express themselves in a foreign language, to foster students positive attitude towards communicating in a foreign language, and to heighten their interest in language and culture, thus deepening international understanding (Wada, 1994, p.1) are the goals of CLT. Minoru Wada, a university professor and a senior advisor to Mombusho in promoting ELT reform in Japan, explains the significance of these guidelines:

> The Mombusho Guidelines, or course of study, is one of the most important legal precepts in the Japanese educational system. It establishes national standards for elementary and secondary schools. It also regulates content, the standard number of annual teaching hours at lower level secondary [junior high] schools, subject areas, subjects, and the standard number of required credits at upper level secondary [senior high] schools. The course of study for the teaching of English as a foreign language announced by the Ministry of Education, Science, and Culture in 1989 stands as a landmark in the history of English education in Japan. For the first time it introduced into English education at both secondary school levels the concept of communicative competence. In 1989, the Ministry of Education, Science, and

> Culture revised the course of study for primary as well as secondary schools on the basis of proposals made in a 1987 report by the Council on the School Curriculum, an advisory group to the Minister of Education, Science and Culture. The basic goal of the revision was to prepare students to cope with the rapidly occurring changes toward a more global society. The report urged Japanese teachers to place much more emphasis on the development of communicative competence in English" (Celce-Murcia, 2001, pp. 13-14).

Communicative instructional design (CI) and Meaningful and communicative instructional design (MCI) are based on communicative language teaching.

2.9. Comprehensible output

Michael Long's interaction hypothesis also emphasizes the importance of comprehensible input but claims that it is most effective when it is modified through the negotiation of meaning. Long claimed that interaction modifications made by native speakers directed toward

L2 learners, such as clarification requests, confirmations of message meaning, and comprehension checks, could contribute to L2 acquisition by providing comprehensible input (Ellis,1997, p. 47).

Long's interaction hypothesis (1983a, 1983b, 1985, 1996) evolved from work by Hatch (1978) on the importance of conversation to developing grammar and from claims by Krashen (1985) that comprehensible input is a necessary condition for SLA. Long argues that interaction facilitates acquisition because of the conversational and linguistic modifications that occur in such discourse. That provides learners with the input they need. Through one type of interaction, termed negotiation by Long, Pica, Gass and Varonis and others, nonnative speakers (NNSs) and their interlocutors signal that they do not understand something (Gass & Varonis 1989, 1994; Long, 1983a, 1983b, 1996; Pica, 1994). Through the resulting interaction, learners have opportunities to understand and use the language that was incomprehensible. Additionally, they may receive more or different input and have more opportunities for output (Swain, 1985, 1995). Various empirical studies have considered the effects of different input and interactional conditions on SLA production and acquisition.

Pica's comprehensive review of work on negotiated interaction suggests that interaction may facilitate conditions and processes that are claimed to be important in second language learning. As linguistic units are rephrased, repeated, and reorganized to aid comprehension, learners may have opportunities to notice features of the target language. Pica showed how, through interaction, syntactic elements may be perceived as units because they are segmented or manipulated; certain features can be given prominence through stress, intonation, and foregrounding. The hypothesis has been further refined and developed by Gass (1997), who stressed that the effects of interaction may not be immediate, pointing out the importance of looking for delayed developmental effects of interaction. Other summaries of the interaction hypothesis' claims and reviews of recent empirical work can be found in Gass, Mackey, and Pica (1998). (Mackey, 1999, p. 558)

Krashen argues that *speaking is the result of acquisition not its cause.* He claims that learners can only learn from their output by treating it as auto-input. In contrast, Merrill Swain has argued that comprehensible output also plays a part in L2 acquisition. She suggests a number of specific ways in which learners can learn from their own

output. Output can serve a consciousness-raising function by helping learners to notice gaps in their inter-languages. They can try out a rule and see whether it leads to successful communication or whether it elicits negative feedback. Learners sometimes talk about their own output, identifying problems with it and discussing ways in which they can be put right (Ellis, 1997, p. 49).

Swain drew our attention to the related process of conversational interaction, *comprehensible output*, arguing that comprehensible input does not necessarily lead to learners' development of grammatical, discourse, and sociolinguistic competence, and thus, learners' production of modified output is another essential element of L2 acquisition. She argued that to achieve native-like competence, L2 learners should be *pushed toward the delivery of a message that is not only conveyed, but that is conveyed precisely, coherently, and appropriately* through meaning negotiation.

Swain (1995) has argued that only through actually producing language is the learner forced to think about syntax. Swain argued for the importance of comprehensible output in the SLA process. What she means by this is that learners, in their effort to be understood in the

target language, are *pushed* in their production and may try out new forms or modify others. To explore output, Swain and Lapkin (1995) used think-aloud procedures during dictogloss tasks that they suggested tap into some of a learner's introspective processes.

Swain and Lapkin (1998) discussed what they termed *collaborative dialogues* in *language-related episodes*, in which the learners talk about the language they are producing or writing. They suggested that such conversations are a source of second language learning. An example of a learner being pushed to produce more comprehensible output (See also Pica et al., 1989) can be seen below (data are from the current study), where the NNS rephrases the original sentence in an effort to be understood and produce a simile of his partial production of the lexical item that seems not to be understood by the native speaker. Example (2) shows the learner restructuring output to facilitate native speaker understanding of the utterance.

(2) NNS: *And one more weep weep this picture.*

NS: *Huh?*

NNS: *Another one like gun to shoot them weep weapon.*

NS: *Oh ok ok yeah I don't have a second weapon though so that's another difference.*

Based on the output hypothesis, it seems that for interaction to facilitate SLA, learners need to have opportunities for output during interaction. In many second language classrooms as well as naturalistic contexts, however, learners often observe the output of others without producing their own output.

Is it helpful for learners to observe output without actually taking part in it? In terms of comprehension, Pica (1992) found no significant differences between learners who observed interaction and learners who took part in interaction. She therefore suggested that it may not be necessary for learners to take part in interaction for it to have a beneficial effect on comprehension; simply observing interaction may be sufficient.

Ellis, Tanaka, and Yamazaki (1994) compared the developmental outcomes for learners who were in the same class and carried out the same task. Some learners actively participated in interaction and some learners just listened. Scores for vocabulary acquisition and comprehension were not significantly different for these learners. Ellis et al. concluded that active participation may be less important for

acquisition than has been claimed, but they noted that it was not detrimental either. Although the processes involved in production and comprehension and the relationship between them obviously preclude direct comparison, these two studies can be considered supportive of the need for further research on the results of observation of interaction, as well as the results of taking part in interaction (Mackey, 1999, p. 559).

If asked how language is acquired, many teachers would reply that it is through comprehensible input, through understanding messages in the L2 that are just a little above one's current language level. There is no doubt that Krashen's input hypothesis still holds great sway among language teachers. Indeed, it would be fair to say that the communicative task-based approach much used in classrooms is, to some extent, based on Krashen's theory. It seems intuitively true, however, that not only comprehension, but also production, has a direct role to play in acquiring a language.

Swain's interest in output evolved in the context of her ongoing study of Canada's French immersion programs. In such programs, non-French speaking children are placed as early as kindergarten into school classes where French is the sole language of instruction. Students are immersed in the L2 and are thus provided with what would seem to be a

nearly ideal, acquisition-rich environment. Yet after doing their schooling in such an environment, do the students acquire native-like competency? Swain investigated the accuracy of predictions based on the comprehensible input hypothesis that immersion would help students acquire native-like competency (Woodfield, 1998).

As a result of her findings Swain then hypothesized that the encouragement of output—and in particular accurate output—is necessary for students to progress further towards target-like competence. Swain also found support for an output hypothesis in the field of psycholinguistics, where researchers have theorized that the complete processing of syntax is not necessary to understand messages. Knowledge of context and lexical items can in some instances enable the understanding of the message content of an utterance without an understanding of its syntax. On the other hand, complete syntactic processing is necessary to produce "accurately" (i.e., like native speakers) because speakers must place vocabulary into a grammatical structure in creating sentences. Swain believes that in such a context, the acquisition of structures is more likely, since attention must be paid to them (Woodfield, 1998).

To consider in more detail just how output provides opportunity for acquisition, let's now turn to the three functions of output that Swain discussed in her talk: noticing, hypothesis testing, and the reflective or meta-linguistic function.

Noticing: Producing language causes learners to notice gaps in their linguistic knowledge. In other words, learners sometimes come to the realization that they do not know how to produce certain linguistic forms. Production, then, stimulates them *to notice what they do not know or know only partially* (Swain, 1995).

Hypothesis testing: Through noticing this gap in their knowledge, language learners may reanalyze their knowledge of the language system. On the basis of this analysis they then generate and test alternative ways of saying what they want to say. In other words, they try to fill the gap in their *function.*

Reflective or meta-linguistic function: refers to the fact that in trying to solve a problem in their output learners may *consciously reflect upon* the nature of the language system. Swain argues that such reflection can aid acquisition. Here hypotheses are not simply generated and tested, but language is used to reflect upon the process. Swain argues that such

reflection can aid acquisition in that it makes the process of noticing and hypothesis testing more explicit to the learner (Woodfield, 1998).

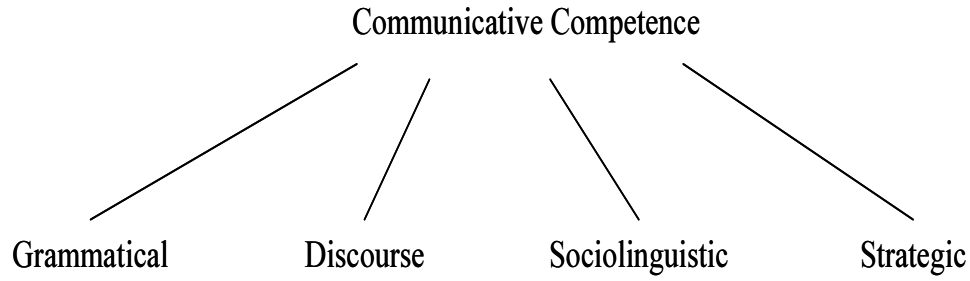
I take the position in this study that language use is both communication and cognitive activity. Language is simultaneously a means of communication and a tool for thinking. Dialogue provides both the occasion for language learning and the evidence for it. Language is both process and product.

When language use is considered as communication, the concepts of input, comprehensible input, and comprehensible output are appropriate metaphors because they conjure up images of messages. These messages are transmitted as output from one source and received as input elsewhere. When there are difficulties in encoding or decoding these messages, language users modify and restructure their interaction to achieve message comprehensibility. “As they negotiate they work linguistically to achieve the needed comprehensibility, whether repeating a message verbatim, adjusting its syntax, changing its words, or modifying its forms and meaning in a lot of other ways”(Pica, 1994, p.494). The hypothesis underlying this perspective is that the activity of negotiation leads to second language (L2) learning because it provides learners with comprehensible input (e.g., Krashen, 1985; Long, 1983).

Recent research such as that conducted by Mackey (1995) and Mackey and Philip provide supportive evidence for this view. Yet we are still left with the issue of how comprehensible input leads to L2 Learning: "What are the mechanisms by which comprehensible input is converted into L2 knowledge and use" (Swain & Lapkin, 1998, pp. 320-337).

Language and culture cannot be dissociated from each other. This makes the communicative process a crucial one, where teaching strategic competence plays a major part in communicative competence development.

Fruitful work on defining communicative competence was carried out by Michael Canale and Merrill Swain (1980). According to their theory, four different components, or subcategories, make up the construct of communicative competence:



[Figure 1] Communicative Competence

The first two sub-categories reflect the use of language itself. Thus grammatical competence includes "knowledge of lexical items and of rules of

morphology, syntax, sentence-grammar semantics and phonology". The second sub-category is discourse competence—the ability to connect sentences in discourse and to form a meaningful whole out of a series of utterances. While grammatical competence focuses on sentence-level grammar, discourse competence is concerned with intersentential relationships.

The last two sub-categories define the most functional aspects of communication. Sociolinguistic competence "requires an understanding of the social context in which language is used: the roles of the participants, the information they share and the function of the interaction". The fourth sub-category is strategic competence, a construct that is exceedingly complex. Canale and Swain (1980) describe strategic competence as "the verbal and non-verbal communication strategies that may be called into action to compensate for breakdowns in communication due to performance variables or due to insufficient competence."

In fact, strategic competence is the way we manipulate language in order to meet communicative goals. An eloquent speaker possesses and uses a sophisticated strategic competence. For example, a salesman utilizes certain strategies of communication to make a product irresistible. A teacher also uses

some strategies of communication to make a student not only remember the material he or she teaches but also to teach him to study.

Canale and Swain's definition of communicative competence has undergone some other modifications over the years. These newer views are best described in Lyle Bachman's(1990) schematization of what he simply calls language competence.

Canale and Swain's Sociolinguistic Competence is now broken into two separate pragmatic categories: functional aspects of language and sociolinguistic aspects. In keeping with current waves of thought, Bachman adds that Strategic Competence is an entirely separate element of Communicative Competence. Here, strategic competence serves as an *executive function of making the final 'decision', among many possible options, on wording, phrasing, and other productive and receptive means for negotiating meaning.*

Cross-cultural research done by different linguists has shown that there exist characteristics of culture that make one culture different from another, and it is cultural awareness that helps learners and teachers of a second language understand both cultural differences and the impact of culturally-induced behavior on language and communication. Cross-cultural awareness covers life and institutions, beliefs and values, everyday attitudes and feelings

conveyed not only by language, but also by paralinguistic features such as dress, gesture, facial expression, stance and movement. The term “cultural awareness” from the standpoints of Barri Tomalin and Susan Stempleski(1996) should include three qualities:

- 1) awareness of one’s own culturally-induced behavior;
- 2) awareness of the culturally-induced behavior of others;
- 3) an ability to explain one’s own cultural standpoint.

Sociolinguistic competence in the framework of pragmatics (the way in which language use is influenced by social context.) includes the functional aspect of language. Pragmatic conventions of language are sometimes difficult to learn because of the disparity between language forms and functions. Linguistic studies in the field of pragmatics have heightened awareness of the degree to which cross-cultural communication is affected by culturally-related factors. Such factors include people’s expectations regarding the appropriate level of formality and degree of politeness in discourse.

The functional approach to describing language has its roots in the traditions of British linguist J. R. Firth, who viewed language as interactive

and interpersonal, as a way of behaving and making others behave. Michael Halliday , who provided one of the best expositions of language functions, used the term "function" to mean the purposive nature of communication and outlined seven different functions of language: a) instrumental; b) regulatory; c) representational; d) interactional; e) personal; f) heuristic; and g) imaginative (Anisimova1999).

Communicative competence has three major components(Canale and Swain,1980). The first is grammatical competence, which includes vocabulary and pronunciation as well as grammar The second is sociolinguistic competence, which is made up of sociocultural rules for using language appropriately and discourse rules for linking parts of a language text coherently and cohesively. The third component of the Canale and Swain's model is strategic competence which consists of verbal and non-verbal communication strategies that may be called into action to compensate for breakdowns in communication due to performance variables or to insufficient competence (O'Malley & Chamot, 1990, p. 9).

Both comprehensible input and comprehensible output, whether negotiated by native or non-native speakers, serve to focus the learners' attention on their current system of interlanguage forms. Learners' realization of gaps between their L2 forms and the actual forms in the target language

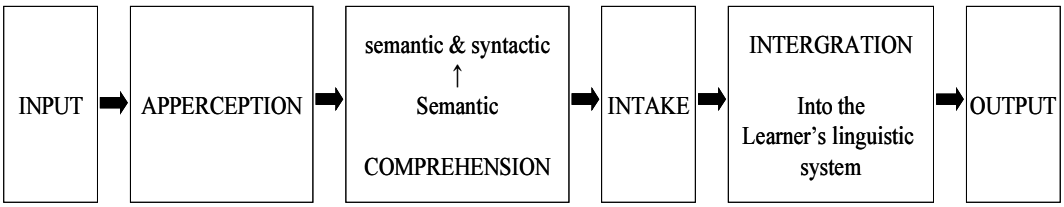
triggers changes in the learners' interlanguage hypotheses and ultimately leads to L2 acquisition.

Communicative Language Teaching is premised on the assumption that learners do not need to be taught grammar.

Warschauer (1996) also examined the effects on student motivation of using computers for writing and communication in the language classroom. A 30-question survey investigated the attitudes toward using computers of 167 ESL and EFL students in 12 university academic writing courses in Hong Kong, Taiwan, and the USA. A mean motivation score for each student was determined and a factor analysis (a principal components analysis, Statview 4.0) was conducted in order to determine how the questions grouped together into categories. Then, in order to determine the effects of personal background on student attitude, correlations were examined between the 30 questions and students self-rated computer knowledge and skills. He found that the students had a positive attitude towards using computer conferencing for writing and he proposed that the three reasons for their motivation were communication, empowerment, and learning (Chang, 2003, p. 22).

Chapelle (1998) uses Gass's (1997) model to summarize a consensus view among interactionist SLA researchers. It supports

Krashen's (1982) idea that a lot of comprehensible input is necessary for SLA. It intends to emphasize what makes input comprehensible and the way it is processed and affects the development of learner's knowledge. Figure 1 is the one outlined by Gass (1977, p.23).



[Figure 2] Gass's Model

2.10. Previous Studies

In 2006, Kim and his team developed the Teaching Assistant Language Exam (TALE): a web-based speaking test designed for international teaching assistants to use at American colleges. This program incorporated into its framework the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) instructional technology construction model.

To investigate the effectiveness of test-takers' participation during the program's development, he examined the "needs analysis" using the SPEAK program. The TALE test examined test takers' roles in their interactions and power relations as well as their contributions to the validity of the study. These results were complied from the data collected from test scores, surveys, and interviews (Kim, J., 2006, p. iii). The results revealed the test-takers' positive contributions via analysis of their decision-making skills in regards to the program's construction and design. "The group dynamics and audit-trail analysis also supported the test-takers positive contributions to the test's construction and gave validity to the arguments justification by investigating their roles in the interaction and power relations within the team" (Kim J., 2006, p.274). The effectiveness of the test-takers' participation was supported by the analyzed results of their cumulative test scores (Kim J., 2006, p.275).

In 2007, Oh developed Computer Application in Second Language Acquisition also known as CASLA. The software program analyzes students' reactions. Dramatic improvement in SLA was noted through using CASLA "courseware". The results were derived from various experimental groups of students. Lower level

students seemed more prone to CASLA and improved at a higher rate than students' at historically higher academic levels (Oh, 2007, p. 46).

Chapter 3 Research Methods

3.1. Subjects

. The participants in this study were students at a Korean two year college and ranged in age from 19 to 24 years. They were enrolled in the English program from 2003 to 2005.

3.2. Measurement tools

Pretest and posttest were executed. The test was a listening test created from the text of the movie. The pretest and posttest are presented in Appendix 4. Reliability of the pretest was 0.493 (Cronbach Alpha) and that of the posttest was 0.897. Therefore, the test was reliable.

I have interviewed 8 students based on posttest scores. They are students with highest scores and students with lowest students in three groups (i.e., MI, CI, MCI) I interviewed them in a quiet environment. Sometimes I have chatted with them via the messenger on the Internet. Interviews were conducted from April 2006 to June 2007. The following

questions were asked: “What do you think of MI, CI, and MCI?”; “Describe one of you typical days as an English learner”; and “What do you think are the effective ways to help you improve your English speaking skills?”

3.3. Educational programming

Using the CI for participants of Research Group CI required them to watch the video and then follow through with a dictation drill in which the computer recorded them. This analyzed their speech pattern and clarity. After this exercise, the participants were tested with a comprehension check-up for retention analysis. Microsoft Agent, Genie, provided constructive criticism.

MCI is characterized by the highest level of interactiveness in that it provides more interactive context than CI and MI. The participants of Research Group MCI through the use of MCI incorporated the usage of the aforementioned CI as well as the following. First, the participants were required to watch the video excerpt first with audio then a second time without. Then they were asked simple questions about the content from the video and its sequences. Next the participants were tested on

target vocabulary. They were required to repeat the words that were written on the screen and work on their pronunciation. Another dictation drill followed in which the participants were given feedback.

Another of the primary advantages of MCI is that it includes oral practice/exercises. The participants were able to choose which character they wished to role play. In the case of this study, the choices were Demi Moore and Robert Redford. The final assignment of MCI was comprehension check-up. This required participants to answer questions in regard to the overall exercise. If all of the answers were answered correctly, then the participants continued on to more difficult material. If the participants answered only half of the questions correctly, then they continued with easier material. If the participants failed to answer any of the questions correctly then automatically they were redirected to the vocabulary sequence of the program.

3.4. Survey

I have interviewed both students with highest score and those with lowest score in the posttest of each group (MI, CI, and MCI). I utilized the Computer Aided Qualitative Data Analysis System NVIVO 2.0 to

analyze the data, and this software is an excellent research tool to show the whole process of analysis and findings in a visible and systematic manner (Park, 2005).

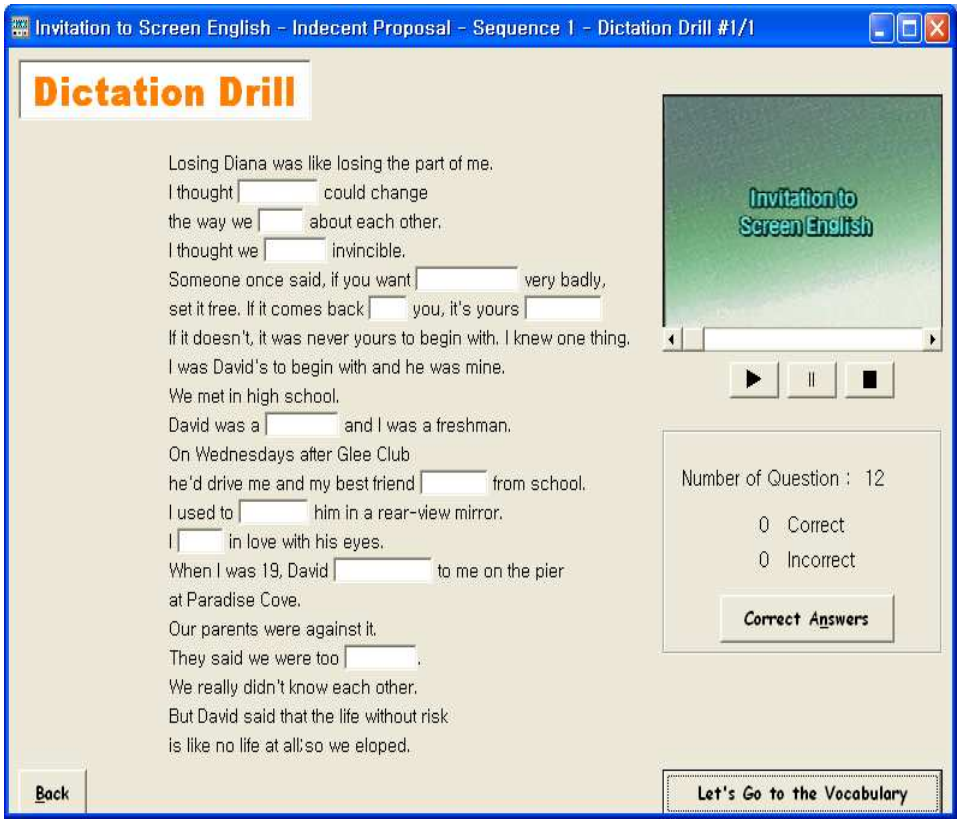
Chapter 4 Instructional Designs

As instructional designs constitute crucial part of this paper, this paper deals with three instructional designs (MI, CI and MCI), which are in focus of the research, in a separate chapter following the research method.

4.1. Mechanical Instructional Design: Indecent Proposal I

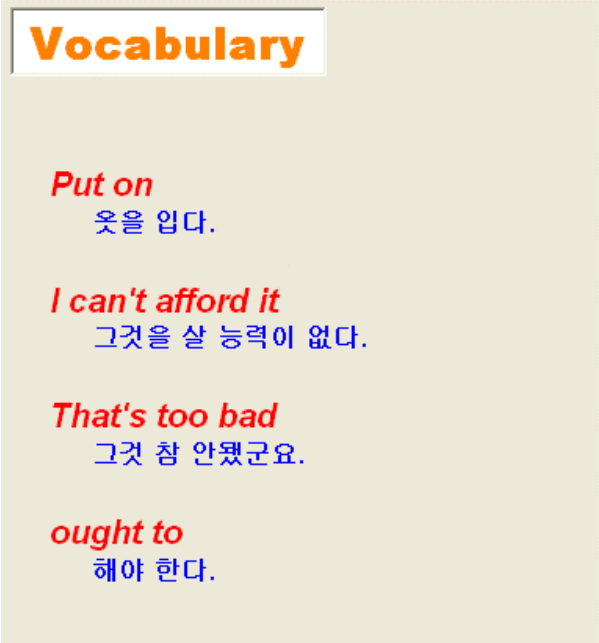
This program is a multimedia software program with mechanical instructional design. It intends to teach the textbook *Invitation to Screen English*, which is used as a textbook of minor English language lab. Language is often manipulated without regard to meaning or context. Language is habit formation. Mimicry and memorization are used. Mechanical instructional design is based on behaviorism.

With video, students do the dictation drill. Students repeat the dialogue. If a student does not know the answer, the teacher gives the answer. The teacher is active and the student is passive. Students might be bored with repetition.



[Figure 3] Dictation Drill

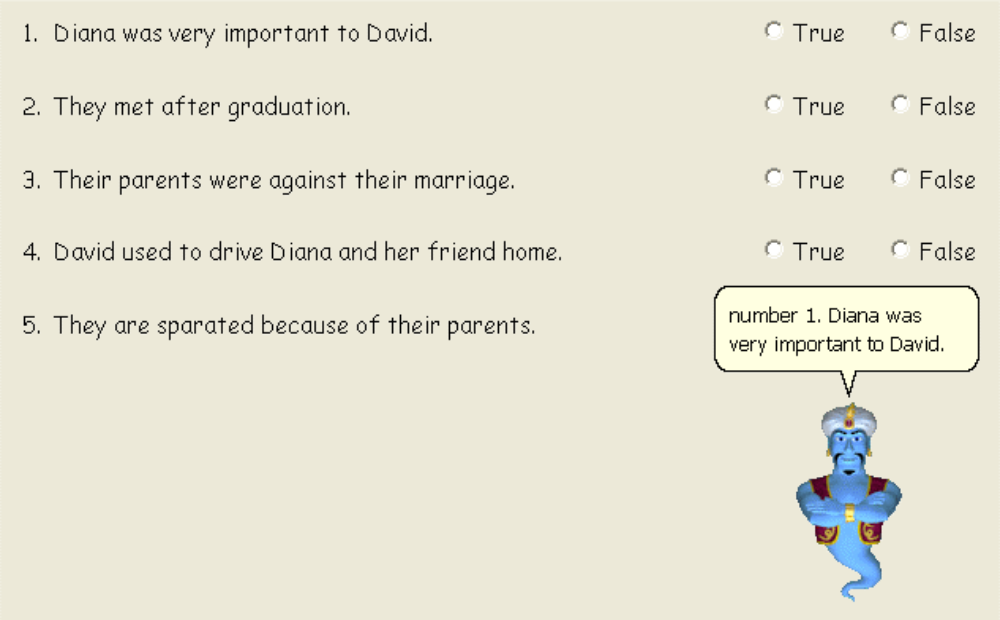
Students have a vocabulary list and dialogue with vocabulary.



[Figure 4] Vocabulary

Students have the translation of the dialogue.

Finally, students have a comprehension check-up of the sequence.



[Figure 5] Comprehension Check Up

Data

The subjects of this experiment are two-year college students. The experiment was conducted from March 2004 to February 2005. Pretest was taken for the class and the class was taught with mechanical instructional design (MI) and the post-test was taken at the end. The average of pretest is 10.76. The average of post-test is 11.12, meaning that improvement of score is 0.36.

4.2. Communicative Instructional Design: Indecent Proposal II

Comprehension-oriented education (CI) and production-oriented education (MCI) in second language acquisition were investigated. Two programs were developed: an input-focused program (CI) and an output-focused program (MCI). This research supports Swain's theory that "The role of output is related to comprehensible output" (Swain, 1985).

1) The first screen is an introduction accompanied by Genie. Here, you can choose the movie, and Genie introduces the program. The Microsoft agent Genie increases interest in using the software.

The agent is the software for accomplishing special objects (Choi & Ju, 1999; Kang & Baek, 2000; So et al., 1999). It has the following characteristics:

(1) Autonomy: It has control over learner's internal state without external interference

(2) Adaptation: An agent should be able to adjust itself to the habits, working methods, and preferences of its user

(3) Situations: An agent has sensitive functions enough to adjust itself to changing environments

(4) Sociality: An agent can interact with users and/or other agents

(5) Mobility: An agent moves around an electronic network, and

(6) Security: Agents do not simply act in response to their environment; they are able to exhibit goal-directed behavior pro-actively by taking the initiative

-(Bjorn, 1996; Casterfranchi, 1995; Genesereth and Ketchpel, 1994; Nadeem et al., 1999; Seo, 1999; (Kang & Kim, 2003, p. 57).

[Figure 6] Select Movie

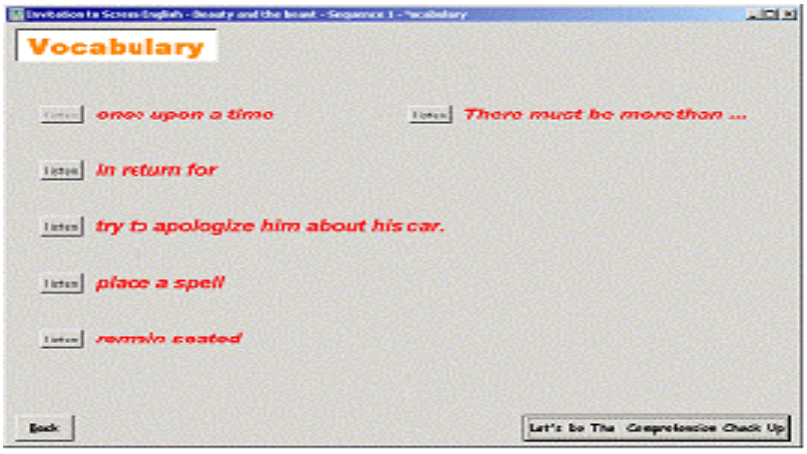
2) Once the movie is selected, the storyline is introduced. The student will imagine the content of the movie and anticipate what the movie is about. Even if the student does not understand what was said, he or she can still see part of it. If the student clicks the sequence button, they can study each sequence separately.

[Figure 7] Select Sequence

3) Click Sequence, and the student will watch sequence 1 once.

[Figure 8] Watch Movie

4) They will learn vocabulary in Sequence 1. They will listen to the sentences with the vocabulary.



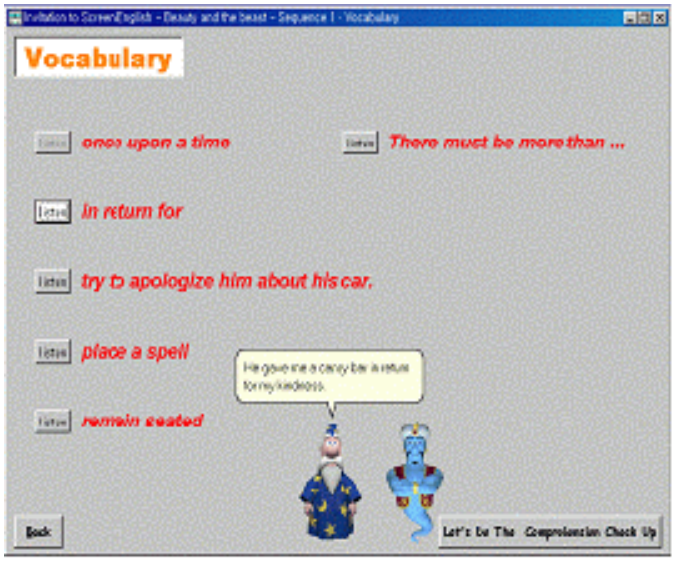
[Figure 9] Learn Vocabulary

5) They can do a dictation drill with the video. Feedback is offered for each sentence.

[Figure 10] Dictation Drill

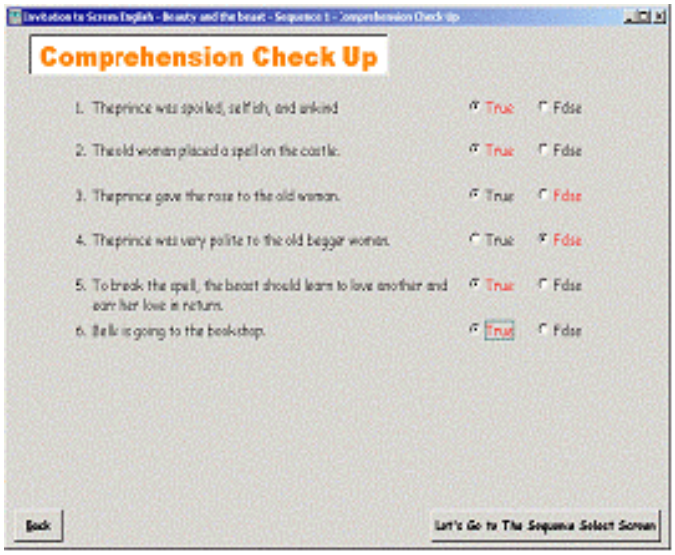
[Figure 11] Feedback of Dictation Drill

6) Next, the student learns the vocabulary of Sequence 1.



[Figure 12] Learn Vocabulary

7) Through Comprehension Check-up, the student's knowledge is confirmed so that they understand the content of sequence 1. Genie will give the feedback for the answer.



[Figure 13] Comprehension Check Up

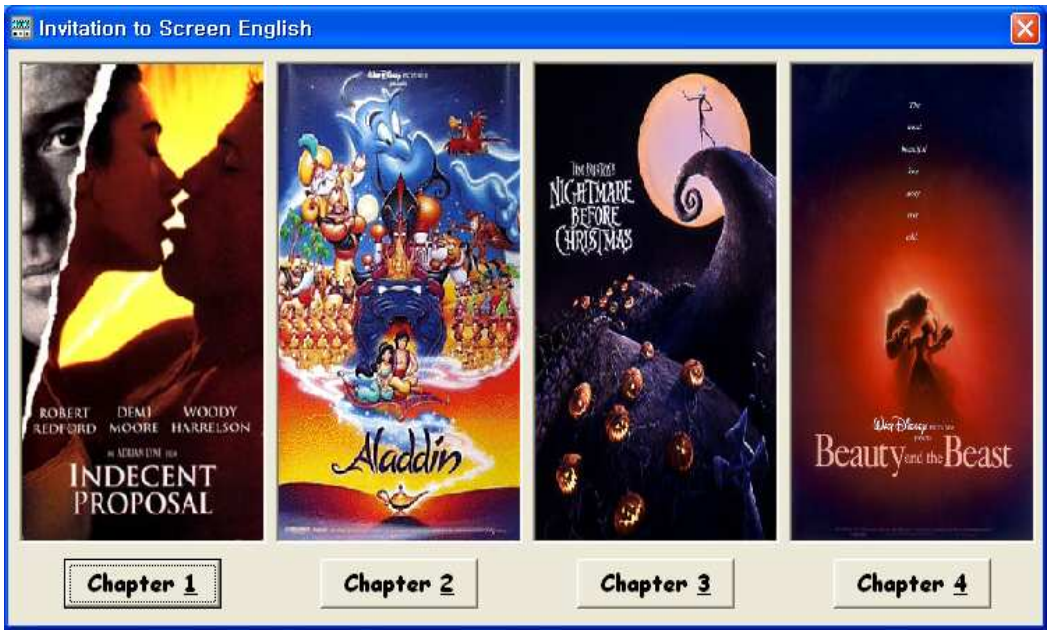
Data

A pretest was administered to the class and the class was taught with communicative instructional design (CI) and the posttest was administered at the end. The pretest average was 7.03. The posttest average was 19.9, for an improvement of score of 12.87.

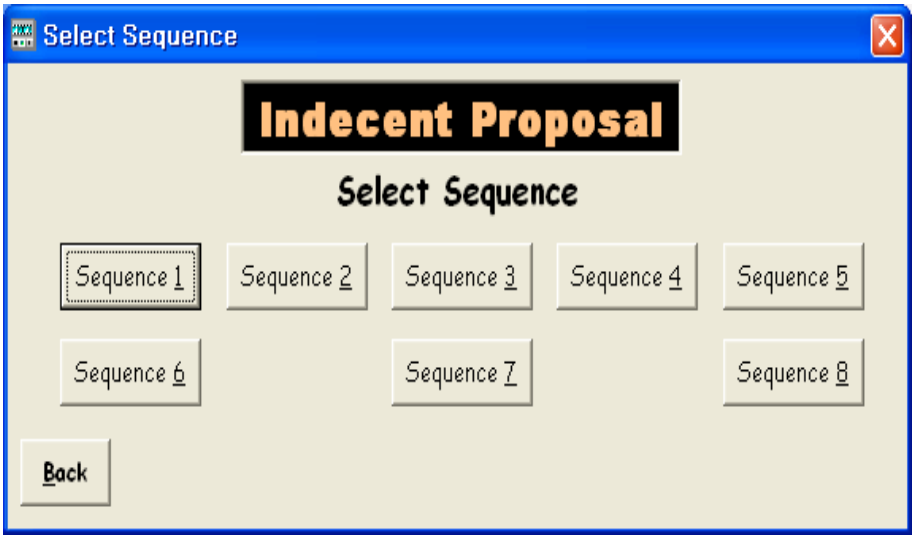
4.3. Meaningful and Communicative Instructional Design: Indecent Proposal III

This instructional design was realized using the CD Rom of CI Indecent Proposal. This design was an out-put focused program. The CI program Genie gives the storyline at the beginning and the level of input is 'i+1'.

Show video.

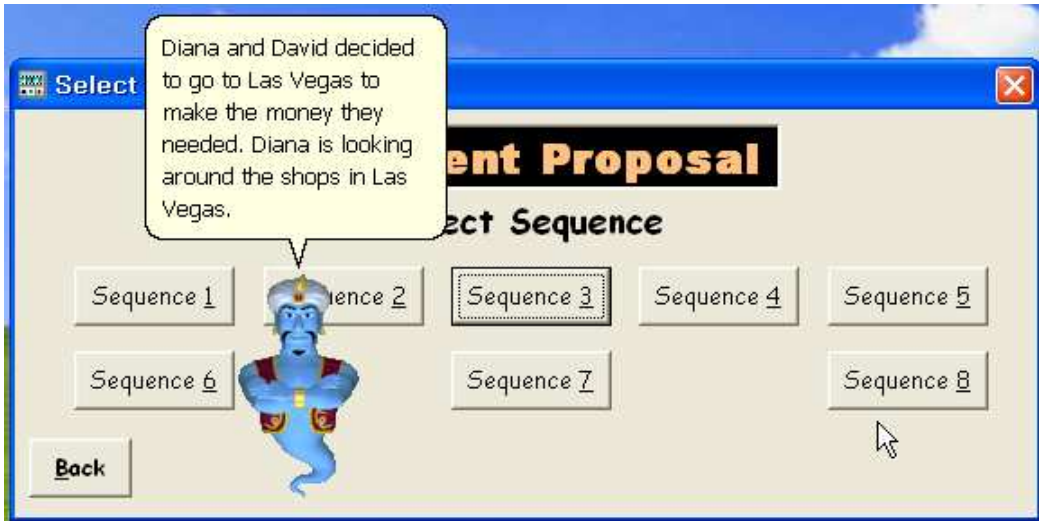


[Figure 14] Select Movie



[Figure 15] Select Sequence

[Figure 16] Watch Movie

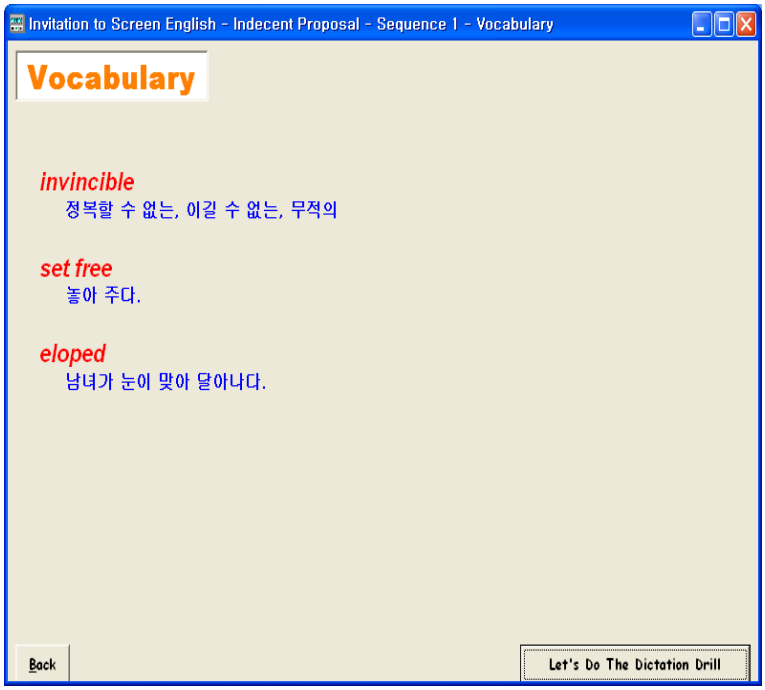


[Figure 17] Storyline

Show video without sound and ask some skimming questions.

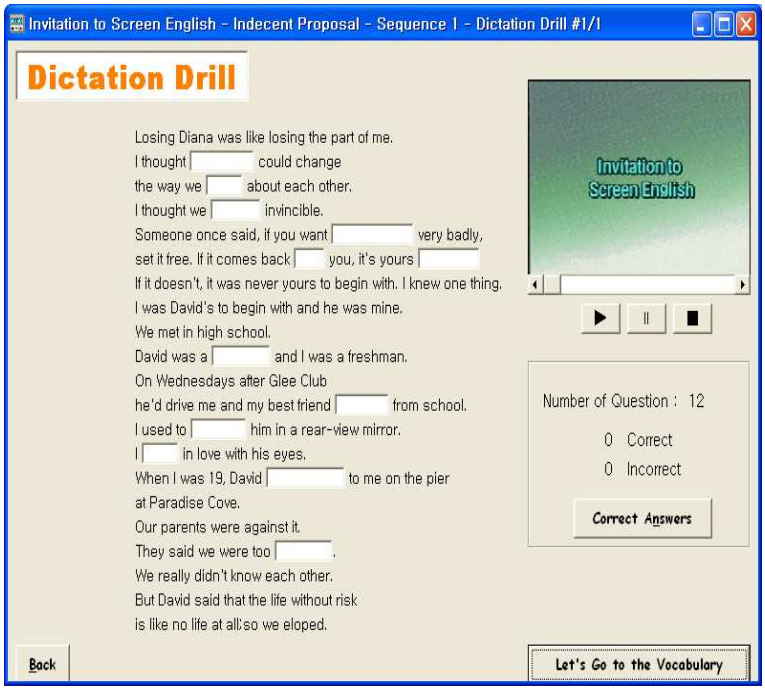
[Figure 18] Show Video Without Sound

Vocabulary

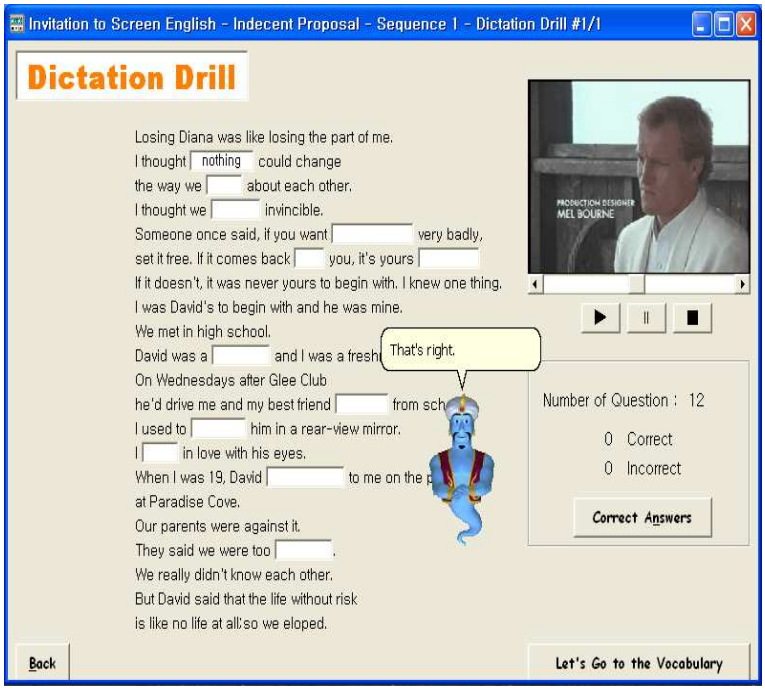


[Figure19] Vocabulary

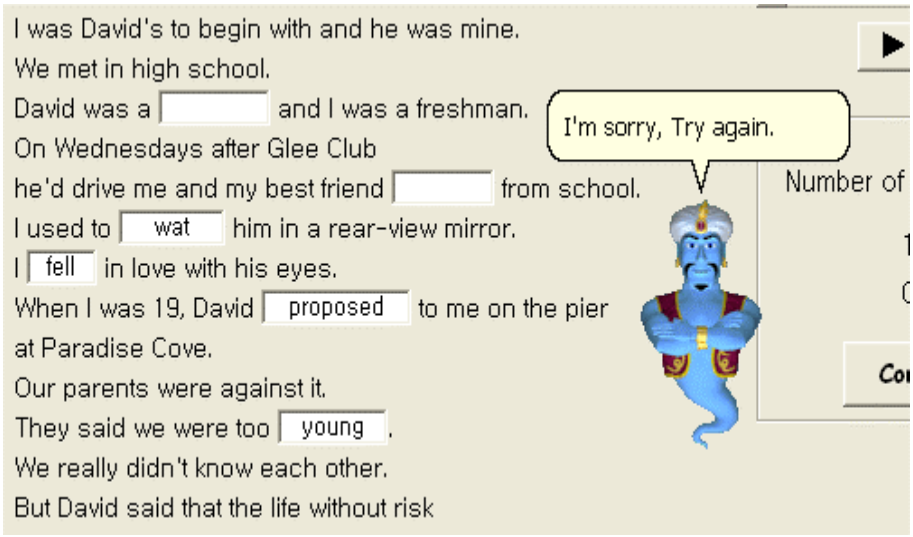
Show video with sound again and the student will fill in the blanks during the Dictation Drill.



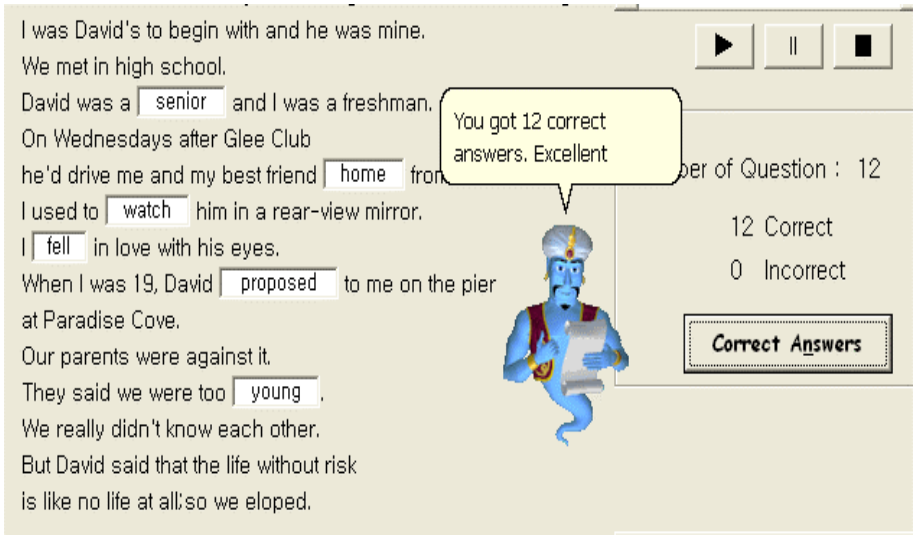
[Figure 20] Dictation Drill



[Figure 21] Dictation Drill

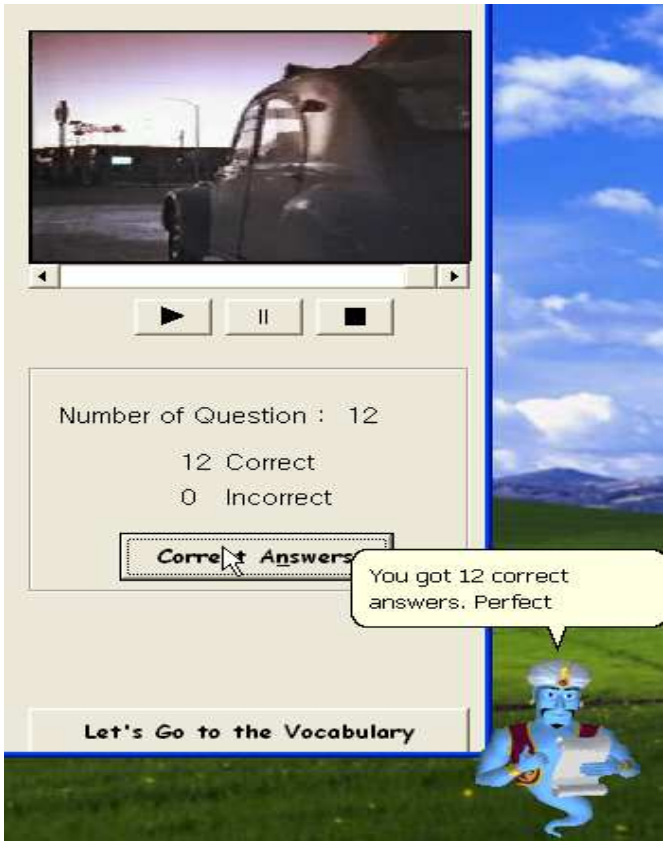


[Figure 22] Dictation Drill



[Figure 23] Feedback of Dictation Drill

[Figure 24] Feedback of Dictation Drill



[Figure 25] Feedback of Dictation Drill

Confirm the script. Listen and repeat and role play parts of the movie.

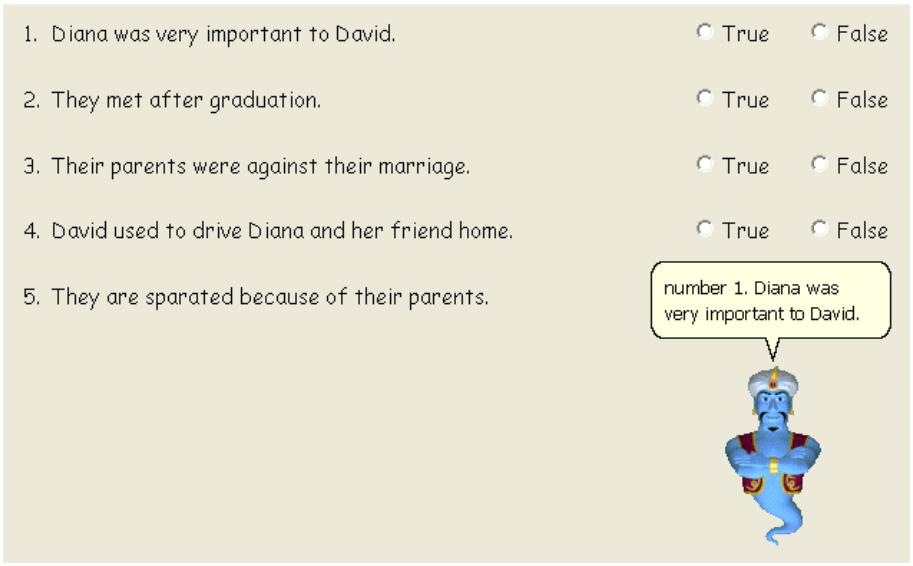
Learn Vocabulary.

Practice Dialogue.

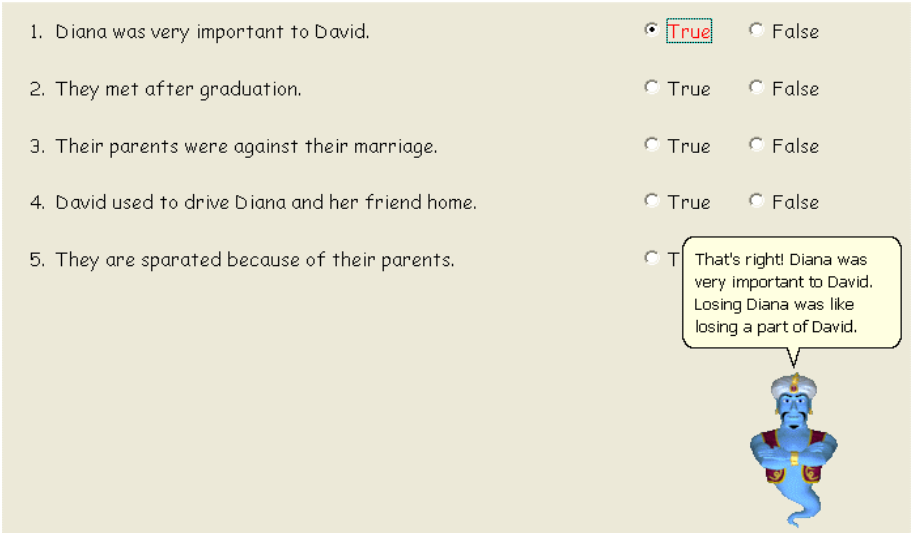
[Figure 26] Learn Vocabulary

[Figure 27] Learn Vocabulary

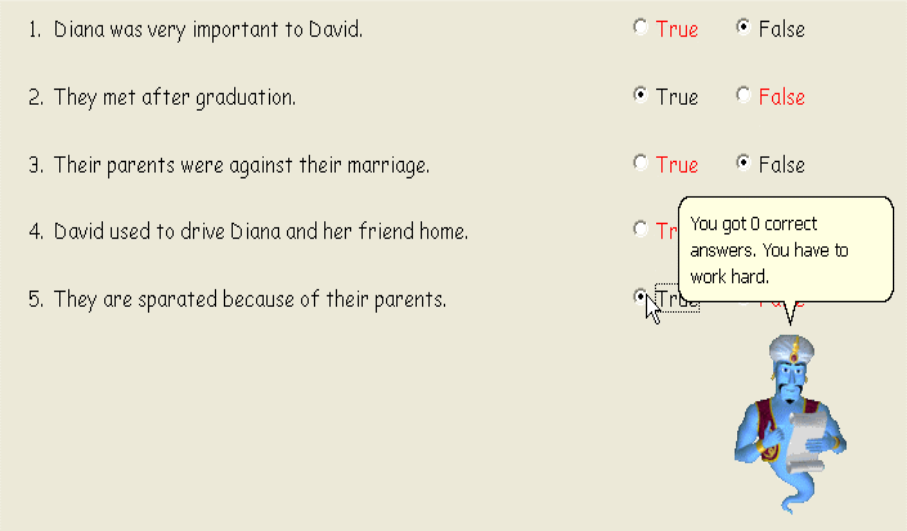
Do the Comprehension Check-Up.



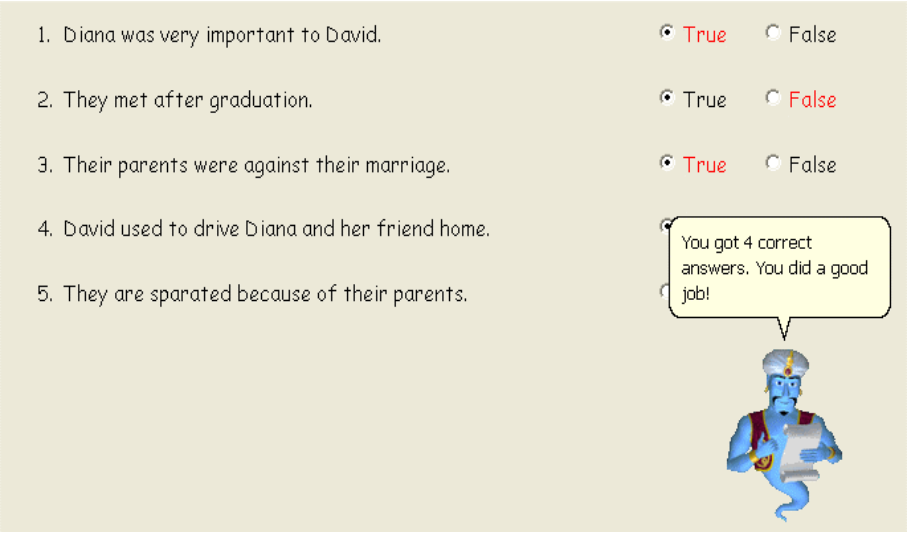
[Figure 28] Comprehension Check Up



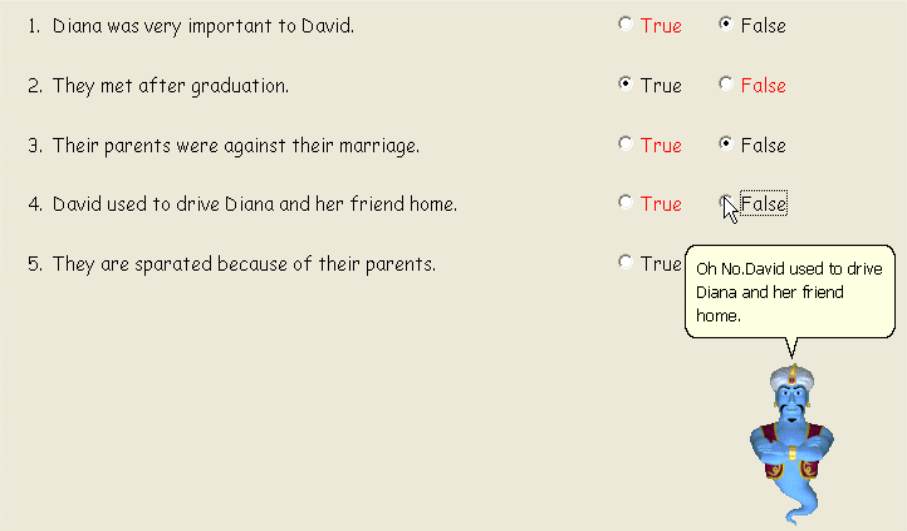
[Figure 29] Comprehension Check Up



[Figure 30] Comprehension Check Up



[Figure 31] Comprehension Check Up



[Figure 32] Comprehension Check Up

The students summarized the content of the sequence. In each sequence, they summarized the content, making possible dialogue after the sequence. Alternatively, they could make a crossword puzzle using the vocabulary. For example after sequence 3, students were asked to imagine the possible scene after the sequence.

Data

A pretest was administered to the class and the class was taught with meaningful and communicative instructional design (MCI) and the posttest was administered at the end. The average of the pretest was

11.97. On the other hand, the average of posttest was 22.57. Therefore, the improvement of average score is 10.6.

Chapter 5 Results and Discussion

5.1. Quantitative Analyses

5.1.1. MI, CI, & MCI

The Group MCI is twice as big as Groups MI and CI in terms of the sample size. The number of subjects in Group MI is 33, while those of Groups CI and MCI are 32 and 30 (60/2), respectively. Parenthetically, the number of subjects of the MCI group was originally 60, but for the sake of statistical comparability, its even-numbered students were included in the analyses.

[Table 1] The average of pretest

	Instructional Design		
	MI	CI	MCI
The average of pretest	10.75	7.03	11.97

There is a difference in the results of pretests among groups. That is to say, Group MI and Group MCI do not exhibit much difference while group CI does. Total score is 30.

Average of Posttest-pretest is as follows:

MI: 0.36 ,CI:12.87, MCI: 10.60

5.1.2. Results of Data Analysis

As the average of pretest of CI group is different from the other two groups (MI and MCI), I analyzed only MI and MCI group. However, the average of the pretest score of CI is 7.0313, and the improvement (discrepancy between pretest and posttest) is 12.8750. The implication of this improvement is that the low level students can be improved more even if instructional design is not meaningful and communicative. That improvement can be analyzed more systematically in qualitative research and correlational analyses to explore the relationship between effects of instructional design and varying English ability levels.

The following analysis is only that of MI and MCI group.

1-MI: 33

2-MCI: 60/2=30 (analyze students of even numbers only)

[Table 2] Comparison of pretest score

Descriptive statistics results

Dependent variable: pretest

Group	Average	Standard deviation	N
1	10.7576	5.44872	33
2	11.9667	7.26581	30
Total	11.3333	6.30668	63

The average of pretest of MI group is 10.7576 and the average of pretest of MCI group is 11.9667.

[Table 3] A variable dispersion analysis

Dependent variable: pretest

Source	**Degree of freedom**	**Average square**	**F**	**Probability of meaningfulness**
Modified Model	1	22.973	.574	.452
Intercept	1	8114.719	202.617	.000
Group	1	22.973	.574	.452
An accidental error	61	40.050		
Total	63			
Modified total	62			

an R square = .009 (modified R square = -.007)

The difference of the pretests between MI group and MCI group is not meaningful statistically at a level of 0.05. That is to say, there is no difference of pretest between the two groups.

[Table 4] Comparison of Improved score

Descriptive statistics results

Dependent variable: improved score

Group	Average	Standard deviation	N
1	.36	4.71579	33
2	10.61	10.17110	30
Total	5.24	9.29880	63

The average of improved score of the MI group is 0.3636 and the average of improved score of the MCI group is 10.6083.

[Table 5] A variable dispersion analysis

Source	Degree of freedom	Average square	F	Probability of meaningfulness
Modified model	1	1649.274	27.105	.000
Intercept	1	1891.750	31.090	.000
Group	1	1649.274	27.105	.000
An accidental error	61	60.848		
Total	63			
Modified total	62			

an R square = .308 (modified R square = .296)

The difference in improved score of the MI group and the MCI group is meaningful at significance level 0.5. That is, the degree of improvement within the two groups is different statistically.

5.1.3.Two way ANOVA by instructional design and English score

A two way ANOVA was employed to discover the relationship between instructional design and English ability. The result of the two way ANOVA is presented in Table 6.

[Table 6] Two-Way ANOVA

Dependent variable: Difference between Pretest and Posttest

	Degree of Freedom	**F**	**Probability of meaningfulness**
Instructional design	2	15.695	.000**
English score	32	1.291	.231
Instructional design English score	30	.809	.735

**: statistically significant at the alpha level of .01

Table 6 indicates that instructional design is statistically significant, but that there is no statistically significant difference among

the students' English ability levels. It also reveals that there is no statistically significant interaction between instructional design and English ability.

When the decision from the Analysis of Variance is to reject the null hypothesis, it means that at least one of the means isn't the same as the other means among the groups in question. Then, it is necessary to figure out where the differences lie among the different groups. This is where the Scheffe' (more conservative) test and Tukey (more lenient/ sensitive) test come into play. They will help us analyze pairs of means to see if there is a difference. Table 7 shows that Tukey test and Scheffe test has identified some statistically significant differences among the groups. The results reveal that there is a statistically significant difference between group 1 and 2, 1 and 3. However, there is no statistically significant difference between group 2 and 3. That is, MCI and CI bring about much better results than MI, but that MCI and CI results in very similar instructional effects. This finding presents very meaningful implications in practicality. Even though CI may not be as desirable as MCI from the theoretical perspective, CI can be equally powerful in helping students acquire English productive skills.

[Table 7] Multiple Comparison

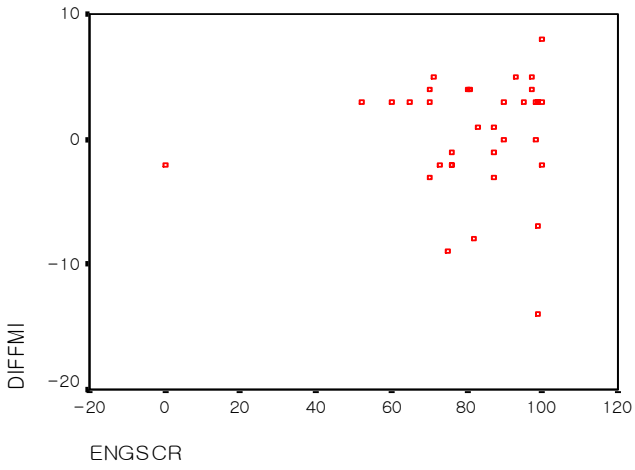
Dependent variable: Difference between Pretest and Posttest

(I) GRINST		(J) GRINST	The difference of average (I-J)	Standard Deviation	Probability of meaningfulness	95% reliable range	
						Minimum	Maximum
1.00	Tukey HSD	2.00	-12.3971(*)	2.1881	.000	-17.6452	-7.1489
		3.00	-13.4304(*)	1.9640	.000	-18.1413	-8.7195
2.00		1.00	12.3971(*)	2.1881	.000	7.1489	17.6452
		3.00	-1.0333	1.9289	.854	-5.6599	3.5932
3.00		1.00	13..4304(*)	1.9640	.000	8.7195	18.1413
		2.00	1.0333	1.9289	.854	-3.5932	5.6599
1.00	Scheffe	2.00	-12.3971(*)	2.1881	.000	-17.8787	-6.9154
		3.00	-13.4304(*)	1.9640	.000	-18.3508	-8.5100
2.00		1.00	12.3971(*)	2.1881	.000	6.9154	17.8787
		3.00	-1.0333	1.9289	.867	-5.8657	3.7991
3.00		1.00	13.4304(*)	1.9640	.000	8.5100	18.3508
		2.00	1.0333	1.9289	.867	-3.7991	5.8657

5.1.4. Correlation between English ability and Improvement by Instructional Design

Given the finding that the instructional design makes a difference on learning outcome, it is well worth the effort to investigate the extent to which the effects of varying instructional designs have on students grouped in varying ability levels. The followings include the revealing findings on the basis of scatterplots of correlational analyses.

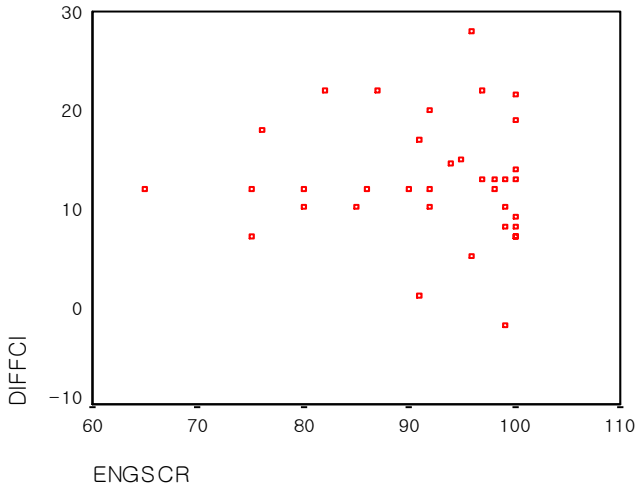
X axis represents English ability level, denoted by ENGSCR. Y axis refers to instructional effects, manifested in terms of the discrepancy (denoted by DIFF) between pretest and posttest scores, instructional effects.



R=.034

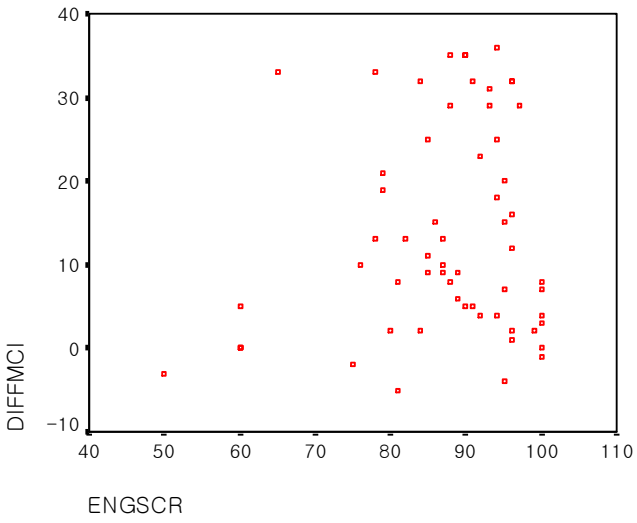
[Figure 33] Scatterplot of MI and English score

With very few plots representing the lower level students' behavioral patterns, it is very difficult to make generalization of the relationship between effects of instructional design and varying English ability levels. For intermediate ability level students, however, MI may be as effective as for high ability level students. However, the scatterplots show that there is no solid pattern or tendency among high ability level students. The scatterplots of high level students (in the right direction on the X axis) are distributed along the Y axis from low to high. This reveals that the high level students may find the MI instructional design either too easy or boring. A future study is required to investigate the cause of this fuzzy pattern in a more systematic manner based on greater data sets.



[Figure 34] Scatterplot of CI and English score

For low level students, there is a proven discrepancy in the effectiveness of the CI program. The scatterplot pattern of CI and English score is in the shape of an isosceles triangle. Just like the MI, the scatterplots of students' learning behavior show that there is no outstanding tendency among high level students. In other words, some high level students find this instructional design as effective as intermediate and lower level students. Nevertheless, there are many other high level students who fail to find MCI ineffective for one reason or another. This finding indicates that the CI may be a more effective approach for intermediate and lower ability level students than for high ability level students.



[Figure 35] Scatterplot of MCI and English score

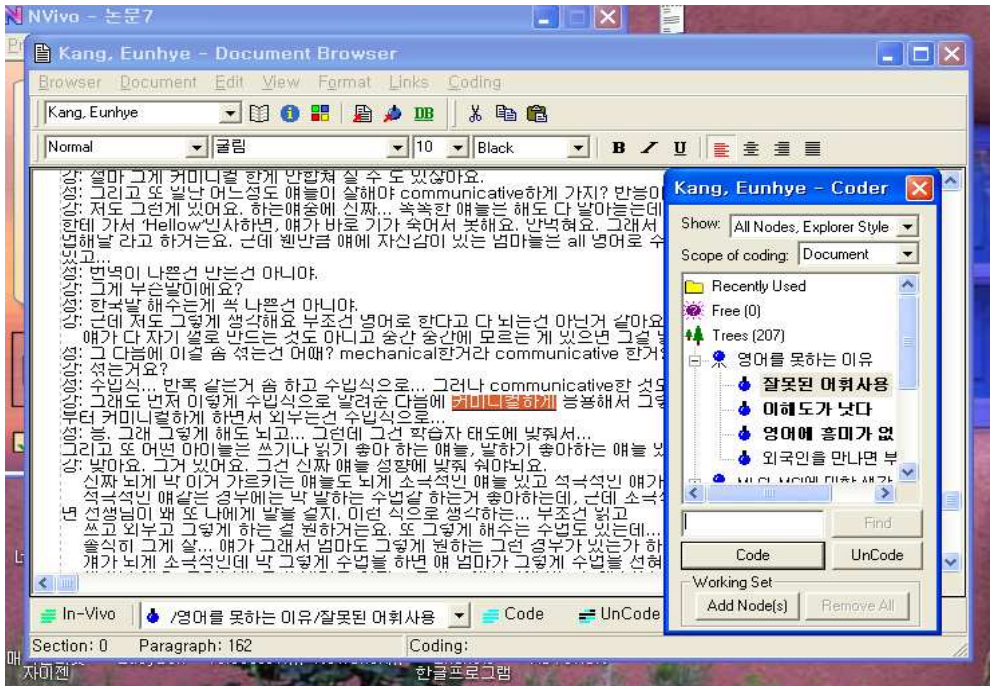
The scatterplots of MCI and English score is in the form of a right angled triangular shape. As in the above patterns of MI and CI, Figure 35 suggests that MCI can be either effective or ineffective for higher ability level students. This may be due to the fact that higher ability level students have their own way of learning and motivation depending on their cognitive and affective styles. Against our common expectation, this elaborate instruction design is definitely ineffective for low ability level students. This finding reveals that even meaningful and communicative instructional design may not have much impact on low ability level students. This finding may be attributed to the fact that the low level students are not equipped with basic English skills to be able to comprehend what is taught through CALL, thus end up having low level of motivation. The meaningful and communicative approach may be well suited for the intermediate and high level students.

5.2. Qualitative Analyses

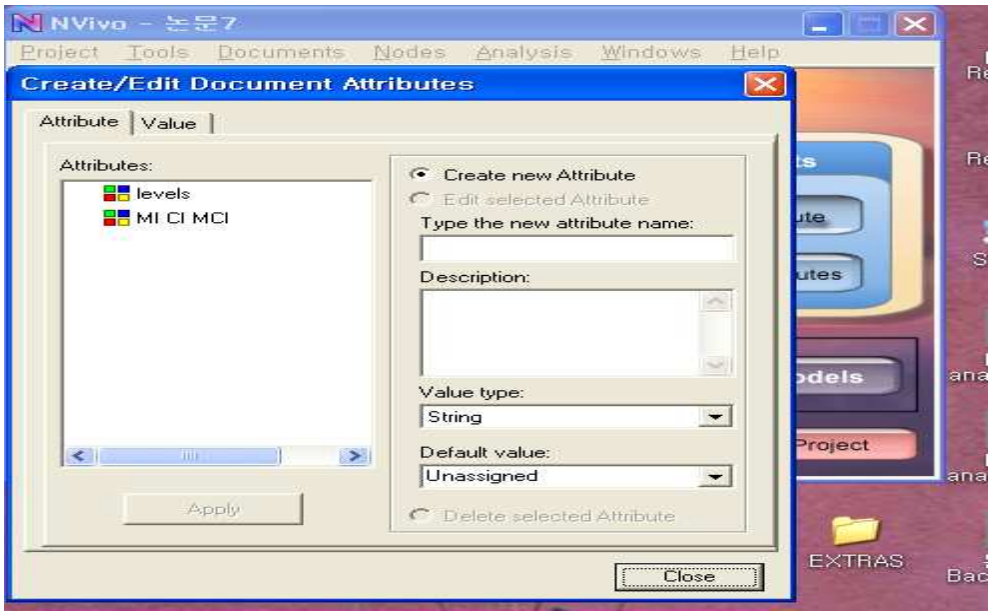
5.2.1. Interviews

Students with the highest scores and those with lowest scores in posttest of each group (MI, CI and MCI) were interviewed. I have interviewed eight students (2 MI lowest students and 1 MI highest student, 2 CI lowest students and 1 CI highest student, 1 MCI lowest student and 1 MCI highest student.) I have interviewed at the quiet restaurant or I have chatted through the messenger from April 2006 to June 2007. Interviews were transcribed and NVivo 2.0 was used for analysis for this study. NVivo software is Computer Aided Qualitative Data Analysis System. NVivo 2.0 is powerful software for qualitative analysis. The software helps to reduce the time to analyze data. NVivo 2.0 helps to develop tree nodes to create ideas, concepts, and categories about the data. This process is called "coding." Figure 36 shows how the data were coded with a coder. "Search Tool" in NVivo 2.0 has many functions. One of the functions is "Matrix Intersection," which shows the relationship between the coded data and attributes (Figure 37)(Kim, H., 2006). Attributes should be set before using the Search Tool, and the attributes are interviewees' characteristics. For the interviews, two attributes were set: interviewee's level and interviewee's instructional design when he or she took the class. The tree ("tree" means the categories, concepts, and ideas of data) I made is the reason why they

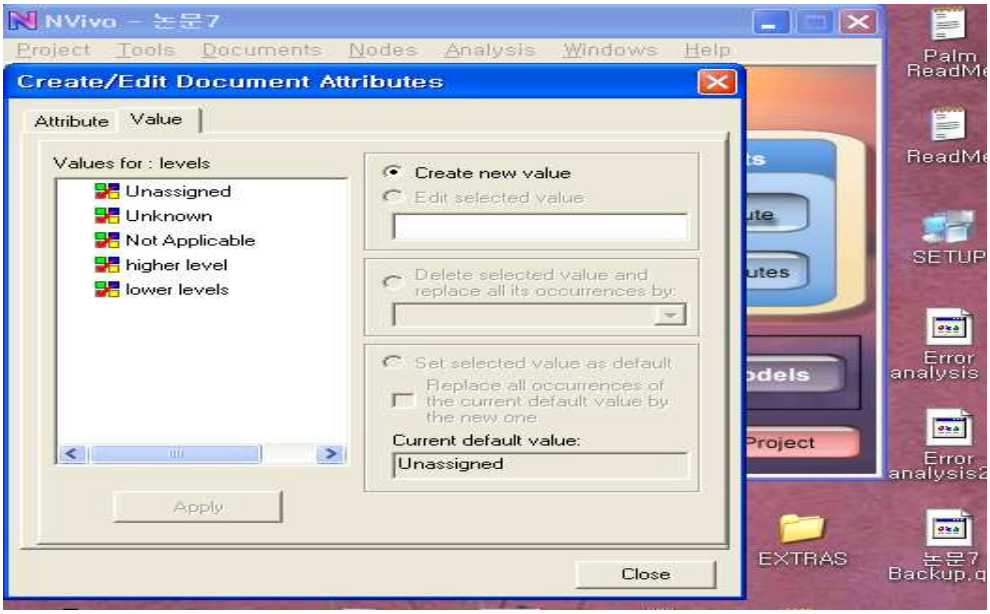
do not speak English well. Sub-tree nodes (subcategories of the tree nodes) are (1) using wrong vocabulary, (2) low understanding level, (3) no interest in learning English, (4) perceived difficulty when they meet foreigners (Figure 39).



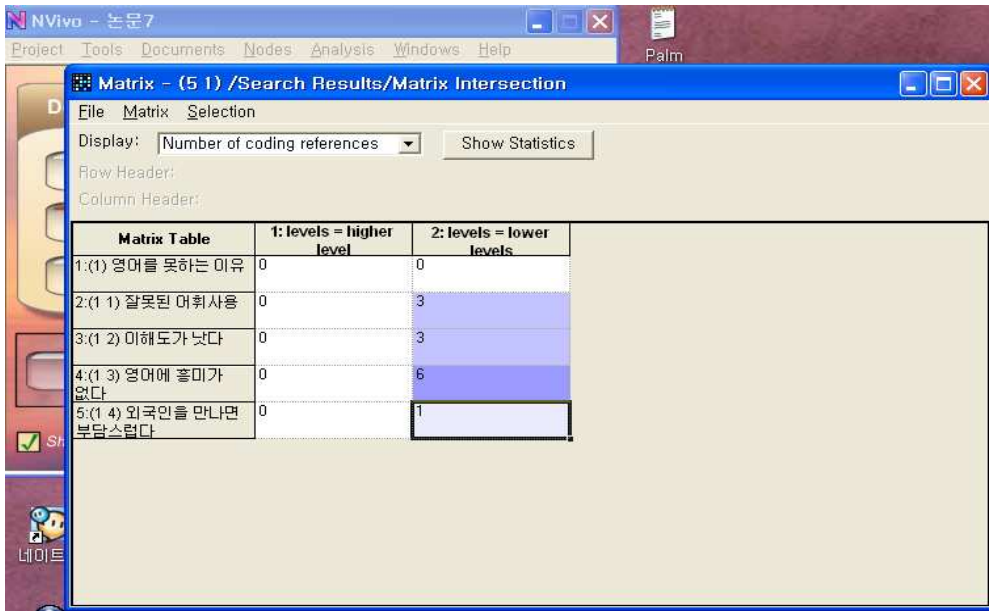
[Figure 36] Coding in NVivo 2.0



[Figure 37] Document Attributes



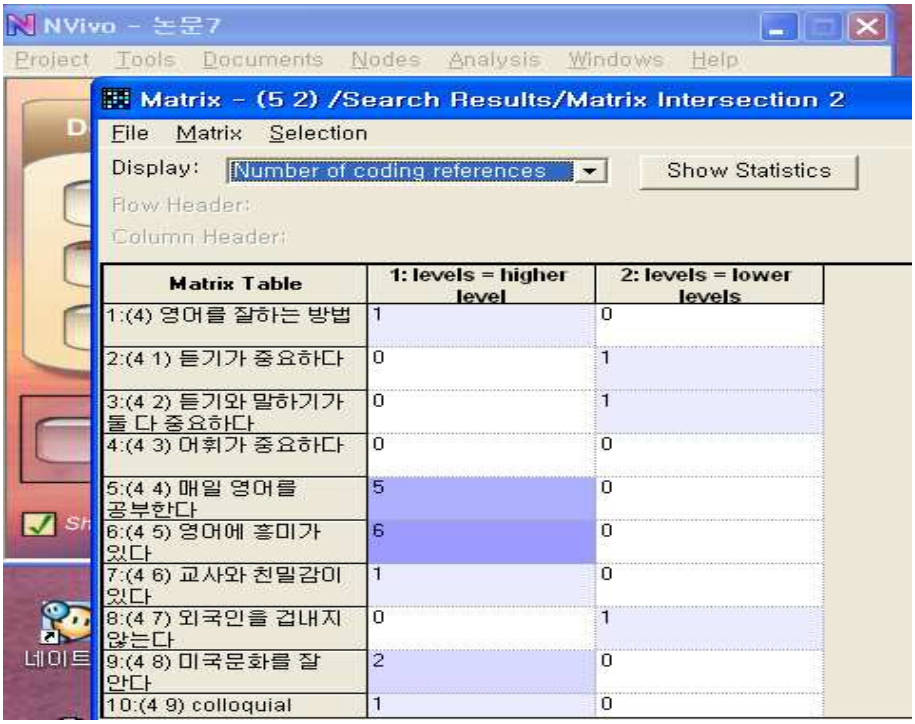
[Figure 38] Create/Edit Document Attributes



[Figure 39] The Reason Why They Do not Speak English Well

There are no coding references for higher level students but there are three coding references of wrong vocabulary, three coding references of low understanding, six coding references of low interest and one coding reference of difficulty of meeting a foreigner. According to the interviews, there are many reasons why they do not speak English very well for low level students. They do not use vocabulary properly; they do not understand very well; they are not interested in learning English; and they have difficulties in meeting a foreigner. An example of wrong vocabulary is “communical” instead of

"communicative." I asked the informant what she thought of mechanical instructional design and communicative instructional design. When she explained her opinion, she said several times "communical" instead of "communicative" because of the word "mechanical." Lower level students are not interested in learning English. They said: "I don't like English popular songs"; "I don't like foreign drama"; "I don't study English because I don't have time to do it"; "English is not necessary"; "I watch Japanese drama rather than American one"; and "I detest English."



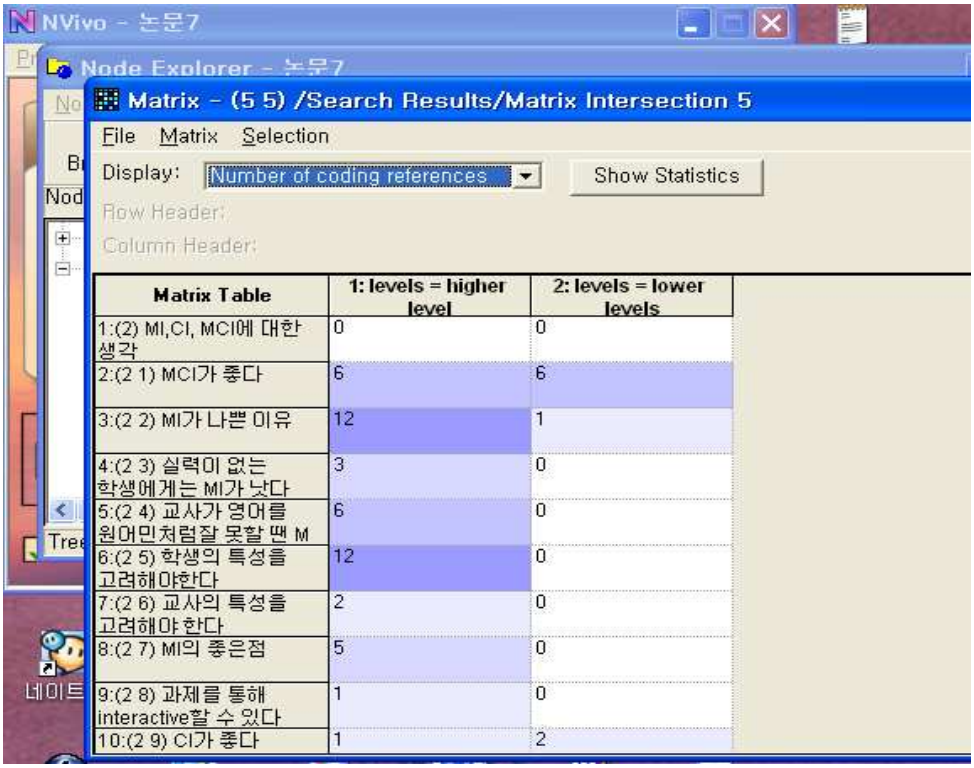
Matrix Table	1: levels = higher level	2: levels = lower levels
1:(4) 영어를 잘하는 방법	1	0
2:(4 1) 듣기가 중요하다	0	1
3:(4 2) 듣기와 말하기가 둘 다 중요하다	0	1
4:(4 3) 어휘가 중요하다	0	0
5:(4 4) 매일 영어를 공부한다	5	0
6:(4 5) 영어에 흥미가 있다	6	0
7:(4 6) 교사와 친밀감이 있다	1	0
8:(4 7) 외국인을 겁내지 않는다	0	1
9:(4 8) 미국문화를 잘 안다	2	0
10:(4 9) colloquial	1	0

[Figure 40] How to Speak English Well.

Another tree node I made is “how to speak English well” and sub-tree nodes are (1) Listening is important; (2) Both listening and speaking are important; (3) Vocabulary is important; (4) I study English everyday; (5) I am interested in learning English; (6) I feel attached to the teacher; (7) I don’t worry about meeting a foreigner; (8) I know American culture well; (9) I know colloquial expressions well; (10) I have a goal; and (11) I have a good environment (Figure 40). There are five coding references of higher level students saying they study English every day but there is no coding reference of lower level students (4). There are six coding references of interest in English but no interest in English of low level students.

One higher level student said, “I was so happy when I heard your voice, professor.” She feels attached to the teacher (6). One higher level student knew the colloquial expression (9), “You are pulling my leg.” There are two coding references of goal (10). She was preparing to transfer to a four year college. Therefore, she had to study English. She also had a good environment (11). Subcategories 6, 8, 9, 10, 11 have coding references of higher level students. It means that higher level students think more about how to speak English well.

These qualitative analyses show that higher level students have much more coding references of how to speak English well than lower level students and zero coding reference of the reason why they do not speak English. However, lower level students have many fewer coding references of how to speak English well and many coding references of the reason why they do not speak English well. This study indicates that high level students have qualities of how to speak English well and low level students have the reason why they do not speak English well.



Matrix Table	1: levels = higher level	2: levels = lower levels
1:(2) MI,CI, MCI에 대한 생각	0	0
2:(2 1) MCI가 좋다	6	6
3:(2 2) MI가 나쁜 이유	12	1
4:(2 3) 실력이 없는 학생에게는 MI가 낫다	3	0
5:(2 4) 교사가 영어를 원어민처럼잘 못할 땐 M	6	0
6:(2 5) 학생의 특성을 고려해야한다	12	0
7:(2 6) 교사의 특성을 고려해야한다	2	0
8:(2 7) MI의 좋은점	5	0
9:(2 8) 과제를 통해 interactive할 수 있다	1	0
10:(2 9) CI가 좋다	1	2

[Figure 41] Opinions about MCI, CI, MI

Students were asked what they think about MCI, CI, MI instructional design. So Figure 41 indicates that the tree node is the opinion about MI, CI, MCI. Figure 41 also shows that the sub-tree nodes are (1) MCI is good; (2) The reason why MI is not good; (3) MI is better for lower level students; (4) If the teacher does not speak English like native speaker, MI is better; (5) The characteristics of the students should be considered; (6) The characteristics of the teacher should be considered; (7) There are good points in MI; (8) You can be interactive with homework; (9) CI is better; (10) Eclectic instructional design is better; and (11) The teaching environment should be considered. Both higher level students and lower level students said that MCI was good. Higher level student said MI was better for lower level students because they cannot be communicative. Also, if the teacher does not speak English well, MI is better. That was the opinion of the higher level students. Higher level students also said that the characteristics of the students should be considered.

They also explained the reasons why MI was not good and the good points of MI. They said: “With MI, students might feel that they don’t speak English and they feel inferior”; “Students are bored with MI”;

“Students don’t concentrate”; and “Teachers are tired because it is only the teacher who speaks.”

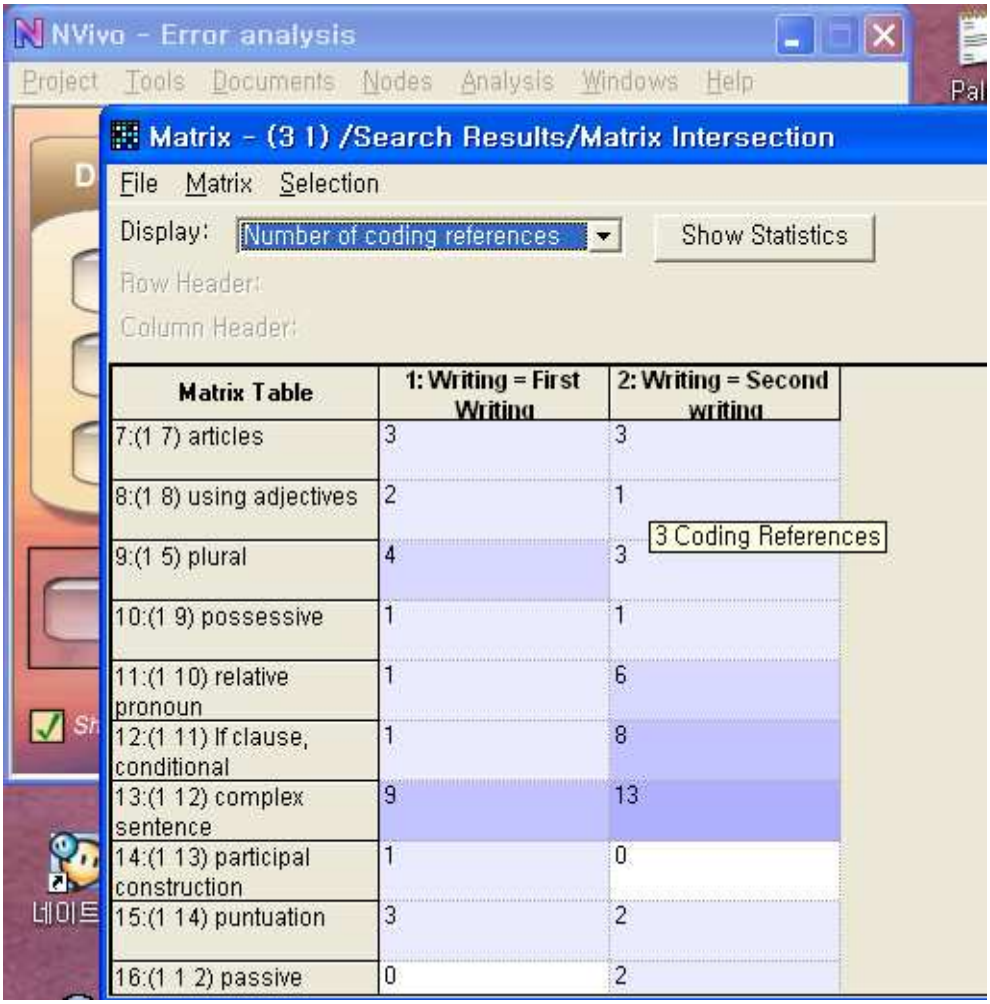
As for the good aspects of MI, the higher level students said: “It is possible to teach many students”; “When the students don’t speak English well, MI is better”; “When the teacher doesn’t speak English well, MI is better”; “I think studying vocabulary after dictation is better. You can concentrate better.” One higher level student and one lower level student said the eclectic method was good. One higher level student said the teaching environment should be considered.

5.2.2. Error Analysis of Homework

Homework was assigned to the MCI students when they finished sequence three and after they finished Indecent Proposal and Aladdin.

The first homework was “Imagine the dialogue after sequence 3” or “Where do you see yourself in ten years?” The second homework included “Summary of Aladdin,” “Summary of Beauty and the Beast,” “If I were Aladdin…,” and “Change the ending of Aladdin.”

Error analysis was done with these two homework assignments. NVivo was used to analyze the data. Attributes were set: First writing and Second writing.



Matrix Table	1: Writing = First Writing	2: Writing = Second writing
7:(1 7) articles	3	3
8:(1 8) using adjectives	2	1
9:(1 5) plural	4	3
10:(1 9) possessive	1	1
11:(1 10) relative pronoun	1	6
12:(1 11) If clause, conditional	1	8
13:(1 12) complex sentence	9	13
14:(1 13) participal construction	1	0
15:(1 14) puntuation	3	2
16:(1 1 2) passive	0	2

[Figure 42] Error Analysis

Figure 42 shows that in the second writing, they had one error in using adjectives; however, in the first writing, they had two errors in using adjectives. In the first writing, they had four errors in plural but they had three errors in the second writing. They used one relative pronoun in the first writing and six relative pronouns in the second writing. They used one *if* clause in the first writing, but eight *if* clauses in the second writing. They used nine complex sentences in the first writing; however, they used 13 complex sentences in the second writing. There were three punctuation errors in the first writing but two punctuation errors in the second writing. There was no error in the passive in the first writing but there were two errors in the second writing. However, the second writing was much longer than the first writing. Students had the ability to write well after the class and they wrote longer passages. Therefore, considering the length of the passages, the error count was not large. In the first writing, there are eight verb errors, but in the second writing there were seven verb errors. Verb errors in the first writing were "be succeed," "I don't want this conversation become my husband. I'm have to go."

From the result of error analysis, we can say that the students improved their writing skill because they used more complex sentences,

more relative pronouns, more *if* clauses and had fewer adjective errors , fewer punctuation errors, and fewer verb errors. They also wrote more in the second writing than the first writing.

Chapter 6 Conclusion and Implications

6.1. Conclusion

The purpose of this study was to show the significance of instructional design in computer assisted language learning. Chapter 6 will summarize the major findings and arguments of the dissertation.

In the area of second language acquisition, there is a high demand for the English language: the preferred form of modern global interaction and communication. One of the continuous problems in SLA lies within the general ineffectiveness of the traditional approaches to teaching. This is due to no cohesion between certain methods. Lack of student interaction is a major concern in the teaching of the target language. Many theories deal with this problem via concentrating on overturning the traditional dichotomy between a teacher and a student, which in all actuality is the role reversal from the typical, active teacher and passive student.

Instructional design theory—based collectively on what we know about learning theories, information technology, systematic analysis and management methods—offers many valuable tools for shaping such a research project. Instructional design reveals its importance and adaptability not only in its varied husbandry, but how you teach can

have a significant influence on the effectiveness of learning, and instructional design is able to accommodate the testing of various language theories easily. The purpose of developing the *Invitation to Screen English Program* was to make a more effective and communicative multimedia software.

For the current project, three CD ROMs were created and tested that emphasized different instructional designs. The first one tested was Mechanical (MI), the second Communicative (CI) and the third Meaningful and Communicative (MCI). The comparison of these three CD ROMs showed the usefulness of instructional design for creating effective methods for teaching second languages in Korea.

Before studying the three different module CD ROMs, a review of SLA theories and their applicability in the contexts of interdisciplinary perspectives to CALL was undertaken.

Traditionally, a classroom is conceived as a venue for the transmission of knowledge, passing from the holder (teacher) to the receiver (student). Within the past 30 years, however, most language theory has occurred in the spirit of challenge to that mold. Krashen's early distinction between acquired and learned knowledge is a case in point. While critics largely condemn his distinction as lacking empirical

validity, in the field of second language learning Krashen has had a lasting influence. This is due to the critical shift in the view of the student, who was now seen as an active, participatory entity, capable of generating their own competency in L2 through negotiation.

Input needs not only to be comprehensible; it must also be authentic—that is, similar to actual language used in actual social situations. Selection of materials is where issues arise: materials should be understandable, but slightly above a student's level, yet cultural differences must be considered in the choice of materials, since the material should not be too biased or too difficult to understand.

As many researchers have pointed out, self-assessment is an important aspect of learning. Analysis of output also offers the sole vehicle for a teacher to conduct evaluation of the student's progress. Creating comprehensible output is then an essential goal of language learning.

Most instructional design modes begin with what is known as the ADDIE model. ADDIE stands for Analyze, Design, Develop, Implement, and Evaluate.

1) Analyze

Students attended a two year course of study at a two year college in Korea. Students were between 19-24 years of age. 90% of South Koreans in their 20s use Cyworld. This trend is an aspect that must be considered when implementing or creating materials for CALL.

2) Design

A huge amount of resources devoted to English education necessitates a large number of competent, qualified instructors. One way to alleviate the problem of the lack of qualified English instructors is to focus research on CALL.

3) Develop

The *Invitation to Screen English Program* was developed in this atmosphere. Language used in real communication is the target to be acquired. Students need error free authentic input that is not just culturally relevant, but practically relevant as well.

4) Implement

Implementation and testing occurred at a two year college in Korea, in the courses Screen English and English Listening Lab.

5) Evaluate

Evaluation discovered the most marked improvement in the English skills of students when using the MCI model.

Since input needs to be comprehensible, authentic, and applicable to a learner's background and practical needs, material for the *Invitation to Screen English Program* was taken from a popular American movie, *Indecent Proposal*. Having established the need for comprehensible output, several methods were incorporated for testing purposes. Dictation, role-play, comprehension check up exercises, and "fill in the blank activities" were evaluated.

Kemmis' (1977) typology of instructional, revelatory, conjectural, and emancipatory CALL was also discussed. Mechanical instructional design is based on behaviorism. The teacher is master and sets the direction. Meaningful and communicative design is based on constructivism. The teacher is not only the possessor of knowledge but also guides and co-learners. Within the last quarter century, communicative language teaching has been put forth around the world as the new or innovative way to teach English as a second or foreign language. Communicative instructional design (CI) and meaningful and communicative instructional design (MCI) are based on communicative language teaching.

Swain drew our attention to the related process of conversational interaction, comprehensible output, arguing that comprehensible input does not necessarily lead to learners' development of grammatical, discourse, and sociolinguistic competence, and thus learners' production of modified output is another essential element of L2 acquisition.

Kim (2006) and his team developed the Teaching Assistant Language Exam (TALE), a web-based speaking test designed for international teaching assistants to use at American colleges. He examined the "need analysis" using the SPEAK program. The results revealed the test-takers' positive contributions via analysis of their decision-making skills in regards to the program's construction and design. Oh (2007) developed Computer Application in Second Language Acquisition also known as CASLA. The software program analyzes students' reactions. Dramatic improvement in SLA was noted through using CASLA courseware.

Indecent Proposal was taught with three different instructional designs (mechanical-MI, communicative-CI, meaningful and communicative-MCI) to two-year college students in 2004-2005. CI is an input-focused program and MCI is an output-focused one.

Since the pretest average of the CI group was different from the other two groups (MI and MCI), only the MI and the MCI group were analyzed.

The pretest average of the MI group was 10.76 and the pretest average of the MCI group was 11.97. The average of improved score of the MI group was 0.36 and the average of improved score of the MCI group was 10.6. The difference of improved scores of the MI group and the MCI group was meaningful since it exceeded a significance level of 0.5. That is to say, the difference of degree of improvement between the two groups was statistically significant.

Given the above research results, it can be concluded that CI is more effective than MI, and that MCI is more effective than CI or MI. It was found that the difference in degree of average score improvement of MI and MCI was statistically significant. These results will assist in shedding light on developing effective learning software in computer-assisted language learning.

Communicative competence is the base of CALL. CALL should include various interactions. These interactions are not just student-tutor interactions. CALL should include error correction and all appropriate

language skills. Each skill should be used to support one another. CALL should teach students to engage in self-directed study. Self-confident students should learn explicit training with a sound studying strategy.

Both quantitative and qualitative analyses of the results were conducted. MCI was more effective than MI. As the pretest score was not the same as MCI and MI, improvement cannot be compared. A two way ANOVA was run, which indicated that instructional design was statistically significant.

Both the highest-score and lowest-score students of each group (MI, CI, and MCI) were interviewed. The higher level students had zero coding reference of the reason why they do not speak English and many coding references of how to speak English well. However, lower level students have many coding references of the reason why they do not speak English and few coding references of how to speak English well. Error analysis of two homework assignments indicated that students improved their writing skills in the second writing.

In summary, the purpose of this study was to show the significance of instructional design in computer assisted language learning. The theoretical background of computer-assisted language learning was first

examined and implemented, and was followed by an exploration of the impact of instructional design on three instructional design based methods using the movie *Indecent Proposal* and printed in the textbook *Invitation to Screen English*. Quantitative and qualitative analyses of the results were conducted. MCI is more effective than MI. A two way ANOVA with instructional design and English score was run and it showed that instructional design was statistically significant. Both the highest score and lowest score students of posttest in each group (MI, CI, and MCI) were interviewed. In the case of higher level students, the qualitative analysis of interviews showed that there were many coding references of how to speak English well; but there were no coding reference of the reason why they do not speak English well. In the case of lower level students, on the other hand, there were many coding references of why they do not speak English well; but there were few coding reference of how to speak English well. Error analysis of two homework assignments indicated that their overall writing skill improved.

6.2. Implications

It is generally agreed that the lack of opportunity for genuine interaction is due to the homogenous nature of Korean society among others, posing a serious threat to successful English education. One of the most effective ways to address this thorny problem would be to incorporate the strengths of CALL into regular textbook-based English classes prevalent in Korea. This focus on CALL becomes doubly important when the role the computer plays in the lives of the younger Korean generation is considered. In the era of U-Learning, it'd be impossible to exclude the influence of ICT from even regular English classes.

As the present research demonstrates, capitalizing on authentic materials within the CALL framework helps enables students to learn authentic language in a very effective manner. With teachers' additional effort to modify the difficulty level, the materials would provide adequate comprehensible input for the learners, thus resulting in much more context-embedded environment than paper-based regular English classes. In selecting and/or developing materials, teachers have to

ensure that the CALL materials meet two essential requirements for maximal acquisition of the target language, i.e. authenticity in terms of sociolinguistic context, and meaningfulness in terms of linguistic and cognitive level of difficulty.

Given all benefits of harnessing the power of CALL, however, it'd be high time that teachers paid more attention to instructional designs than before in order to maximize the efficacy of CALL-driven English education, tailored to students of varying ability levels.

The research findings can be generalized to apply the research findings to English education in the Korean context. MCI would be more effective for higher level students, but does not seem to lead to good results on low level students. On the other hand, MI appears to be a more desirable approach for low level students, but would not attract attention among high level students, who are likely to be bored with the mechanical aspects of instructional design. MI would be more effective for the larger class size, where students' ability level is low and the teacher is not very fluent in English.

It is worth noting that CI is a very effective instructional method, producing as even better results than MCI for lower ability level of

students. Considering the sheer amount of effort and time required for developing software and incorporating CALL in class, CI, which is less time-consuming to implement than MCI, may provide a better alternative approach to tackling the current persistent problems plaguing English education in Korea.

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APPENDIX

1. Data of MI, CI, and MCI group

Data of MI

	Pre-test	Post-test	Posttest-pretest (+/-)
1	9	12	3
2	10	8	-2
3	5	8	3
4	6	3	-3
5	6	10	4
6	0	5	5
7	6	10	4
8	9	7	-2
9	7	5	-2
10	11	12	1
11	10	9	-1
12	15	18	3
13	17	10	-7

14	11	8	-3
15	14	12	-2
16	19	5	-14
17	8	9	1
18	11	16	5
19	8	8	0
20	13	12	-1
21	16	19	3
22	11	19	8
23	13	11	-2
24	18	9	-9
25	22	25	3
26	8	11	3
27	8	11	3
28	18	10	-8
29	2	5	3
30	17	20	3
31	1	5	4
32	16	20	4

33	10	15	5
	10.76	11.12	0.36

Data of CI group

CI	Pretest	Post-test	Posttest-Pretest
1	11	30	19
2	7	29	22
3	8	29.5	21.5
4	11	28	17
5	5	23	18
6	10	20	10
7	6	28	22
8	8	20	12
9	8	30	22
10	7	19	12
11	1	13	12
12	10	30	20

13	2	30	28
14	12	26.5	14.5
15	13	25	12
16	6	16	10
17	4	14	10
18	5	12	7
19	11	25	14
20	8	18	10
21	8	15	7
22	3	16	13
23	8	13	5
24	3	15	12
25	5	14	9
26	5	6	1
27	11	19	8
28	7	15	8
29	3	15	12
30	4	17	13
31	6	19	13

32	9	7	-2
	7.03	19.9	12.88

Data of MCI group

MCI	Pretest	Postest	Posttest-pretest
1	10	29.25	19.25
2	7	30	23
3	9	30	21
4	4	21.75	17.75
5	4	0	-4
6	4	30	26
7	5	30	25
8	5	30	25
9	10	29.25	19.25
10	8	0	-8
11	8	30	22
12	14	10	-4
13	8	15	7

14	8	18	10
15	10	18	8
16	12	10	-2
17	9	18	9
18	12	17	5
19	9	6	-3
20	12	16	4
21	18	30	12
22	25	29	4
23	13	29	16
24	8	26	18
25	18	29	11
26	14	29	15
27	29	28	-1
28	9	29	20
29	27	30	3
30	30	30	0
	11.97	22.58	10.60

2. Programming

This program is based on the book *Invitation to Screen English*. It includes the contents of the book and movie. The tool for programming is Visual Basic 6.0 and components added to the tool are Windows Media Player, Microsoft Agent 2.0 etc. Before composing the program, all the programs related Agent 2.0 were installed.

Programming can be divided into seven parts as follows. Every scene has BACK and FORWARD button so it is easy to move menu.

Main frame of programming

1. Main frame: When the pictures of each chapter appear, you can choose the chapter
2. Choosing sequence frame: When you choose the chapter, next you can choose the sequence. Here the frame shows sequences for each chapter and you choose the sequence.(Sequence numbers are used as initialized with distribution.
3. Movie playing: This part plays the movie of each sequence.
4. Vocabulary 1: Before dictation drill, it shows important vocabulary at each sequence. The structure of frame is similar to Vocabulary 2, but there is no conversation. You will see the translation of vocabulary in Korean.

5. Dictation Drill: User studies put right words in the blanket like the book when he is viewing movie. When user pushes “enter”, the Genie tells if it is correct or not. If you push “correct answer” button, it will change the wrong answers into correct answers in red.

6. Vocabulary 2: It will show important sentences, it will also show example sentences using each sentence.

7. Comprehension Checkup: It will confirm the student’s comprehension. You answer True or False. When the answer is correct, you can hear why it’s correct and when the answer is wrong, you can hear why it is wrong. The right answer is indicated in red.

Various data file used in programming

These data are movies used in each sequence. They are placed in CD-Rom drive. If there are no movies, the movies cannot be played.

The name of the movie file is X_Y, MPG format. Here X means the number of Chapter and Y means the number of sequence.

These are data used in real program. W is the number of Chapter, X is the number of sequence, Z is each detail in the sequence. If Z is 1, they are the data related to dictation drill. If Z is 2, they are vocabulary data. If Z is 3, they are comprehension check up data. Last Z part is the

number added when the item has more than one data. This number increases only the data related dictation drill. All the other data use 1 There is a file, 0_0_?_0.TXT. This is the data file reading default when the sequence does not have the data in order to prevent error. If the data shows the content, it means there is no file or the file name is wrong. So you have to confirm it.

Examples of each data file

1. Sequence data ?_?_1_?.TXT

-[1_1_1_1.TXT]----------

0

0

Losing Diana was like losing a part of me.

I thought {nothing} could change

the way we {felt} about each other.

I thought we {were} invincible.

---

0 on the first line is the part of the beginning of the movie. So if you set 0,the movie plays from the beginning.

0 on the second line is the part of the ending of the movie. So if you set 0, the movie plays to the end.

Above numbers are all calculated with the unit of second. If the ending time is one minute and 10 seconds, you should write 70 on the second line.

From third line, actual data are saved. You put the same contents of the book, but blank is marked "{}", and you write actual answer. This is used as correct answers in the program. The mark is white text box.

2. Vocabulary data ?_?_2_?.TXT

-[1_1_2_1.TXT]----------

~invincible

정복할 수 없는, 이길 수 없는, 무적의

A: This is an invincible game

B: I agree. I was preoccupied with it for several days but I couldn't beat it.

A: But Tom beat it after all.

B: Really?

~set free

놓아 주다.

A: What did you do with the frog yesterday?

B: I first put it in a jar, but set it free this morning.

Before each vocabulary or expressions, “~” will indicate the theme. The rest is the same as the book. If you want to indicate blank within example, you put “@” on each line.

3. Vocabulary data ?_?_3_?.TXT

-[1_1_3_1.TXT]----------

T1.Diana was very important to David.

F2.They met after graduation.

T3.Their parents were against their marriage.

3. Homework

1-1 First Writing

After Chapter3 Bae

A: Hey wait for a minute.

B: Shit! What inturrept me... what's up?

A: Sorry but what is your name?

B: My name is Demi-moore. why?

A: Haven't you thought about being an entertainer?

B: What?who are you?

A: How are you? Fact I am jae woo bae, the popular director of SM entertainment.

Our company is making a film on looking for an actress.

You are just suitable for the character of her.

Beautiful face and beautiful body line! It's perfect. Rimario~

B: Who is my counter?

A: He is a rising star, Mr.Lee Huk Jae

B: I am the fan of him.That's hair too art...

I would like to participate in it.

A: Thank you!! Let's go

1-2 Bae Second Writing

Beauty and the Beast

A father who is an inventor and a sweet beautiful lady, Belle, dreamed a romantic love.

There is a man whose name is Gaston, muscular man, who ardently want her love.

But she doesn't have any interest to him.

Someday, her father leaves to exhibit his invention,

but the father get lost because of an attack from wolves.

After all, he entered a lonely palace.

There he met a beast and was locked in.

After she knew this fact, she leaves to find her father.

Finally, she met the beast.but the beast was slightly surprised with the fact that she is not afraid of him.After coming to the village, on the other hand,

Belle's father want people to save her doughter from the beast and become insane.

Belle who doesn't know this come out from the palace with the beast's permit to meet her father.But the Beast go gloomy with the thought of her not coming back.

Gaston invade the palace with people to kill the beast...

2-1 Shim First Writing

Where do you see yourself in ten years?

I will go to work everyday for my family. prehaps, I will need to a money to live.

. I am going to be engineer of the word in power plant so l always study english.

. so I will be succeed on forty half. A fortuneteller said that I will be succeed at

then and I am going to become father of two-baby after ten years. After I will be

succeed. I will have a car of BMW and a house of the country. My child will

play on a yard and I will look they. At night, we will look a star . At the same

, time, Our soul will feel happiness.I will try to perform that.

. please wish good luck for me.

2-2 Shim Second Writing

If I am Aladdin

If I am Aladdin

If I am Aladdin I call genni from a magic lamp

Because Genni is going to help my three wishes.

First , I get a magic. The magic is Gennis`s magic.

second , I will be get married with Jasmin . She is my lover.

and I will travel all over world by a magic carpet.

and I will enjoy many food and a site of scenic of in the world.

At last, I make jasmin of several hundred people.

They will be the mother of thousands of people so I will make a kingdom of my. And I will give freedom to Genni.

The kingdom will be prosperous douring 10year of thousands.

Then i will travel out word into srace.

3-1 Yang First Writing

Demi Moore: a , Redford: b

B: You are so beautiful ! May I have your name ?

A: I'm Diana. I have six children.

B: Really ? I have five children ,too. Why don't we make a football team for our children ?

A: That sounds great ! But I have trouble making a football team.

Because

there is a girl in my children.

B: Don't worry Diana! Do you think it is possible to make a baby, tonight?

A: Well , I don't think so.

B: How about adopting a baby?

A: Well, talk about it later. I have to go now.

I'll pick up the kids in front of school.

B: Ok, I'll call you later. What's your phone number?

A: My phone number? hm~ It's 060-1544-8282.

B: I'll call you later. See you again. Bye

A: Bye!

3-2 Yang　Second Writing

Beauty and the Beast

Once upon a time, in a faraway land, a young prince

lived in a beautiful castle.

But he was spoiled, selfish, and unkind.

One winter’s night, an old beggar woman came to the castle and offered him

a single rose in return for shelter from the bitter cold.

but he rejected the offer.

And then, the old woman became ti a beautiful enchantress

She is no longer a old beggar woman.

So, the prince tried to apologize, but it was too late.

She placed a spell the prince and on the castle, so the prince became a terrible beast.

The enchantress gave him a rose, which would bloom until his twenty-first year.

It he could learn to love another, and earn her love in return by the time the last

petal fell, then the spell would be broken

if not, he remained unchanged forever.

Who could ever learn to love a beast?

There is a little town. Her name is Belle.

She was bored with a quiet village's every day.

Later, she might fall in love with a big beast.

4-1 Yang Chun. First Writing

My Appearance after ten years have passed.

Years stolen by, I became the mother having two childrens.

At day light, I discharge the my duty as a ordinary mother,

that is, I cleaned up my sweet home and washed the laundary, and so on.

Iin the evening, we have a delicious dinner have prepared by me for

Family.

Although these same days were repeated,

I am very happy to have my sweet home and my lovely family.

Thank you for reading my story!

4-2 Yang Chun Second Writing

He fell over a precipice and fainted.

After for a while, he came out of a faint and looked around.

Because it was dark within the place, he couldn't see anything.

But he found something glittering and got near there.

It is the lamp that he found.

When he rebbed the lamp a fairy came out from the lamp with smoke.

The fairy said " tell me what you want, and then i will comply with your

desire" so he said

take me out this place and a fairy did it.

And then he wanted to be with Jasmine.

So he requested the fairy with the fairy's help,the desire was accomplished.

And they met again! As time goes by,they fell in love with each other and wanted to marry.

But Jasmine had a worry. She really wanted to see her father.

So,they requested the fairy, he changed her father's mind.

After that, they married and lived together her father.

5-1 Lee First Writing

D:Demi Moore , R:Robert Redford

R: Well, Let me buy another for you.

D: Thanks, but just looking right now.

R: No problem. Let me know if I can help.

D: Thanks Robert... look at this one. what do you think this？

R: It's beautiful. How much are these？

D: These are too expensive.

R: Come on... Tell me how much...

D: Five hundred dollars. Can I try this on？

R: Sure.The fitting rooms are right over there.

Just go on it.

D: Thank you...I am ready... How does this look？

R: Wow! You look fantastic! It looks beautiful on you.

D: Let me look at it . Thank you.

5-2 Lee Second Writing

They talked together,and laid a plan for getting back the lamp.Aladdin went into the city and bought a powder that would cause instant death. The Princess dressed herself in rich robes, and invited the magician to sup with her.

While they were at the table, she ordered a slave to bring two cups of wine which she had prepared. The magician, pleased by her kindness, gladly drank the wine she gave him, and at

once fell dead.

Aladdin, who was hiding near by, seized the lamp and called the genie, bidding him to carry the palace back to China.

A few hours later,the Sultan, looking from his window, saw Aladdin's palace sparkling in the sun. He ordered a great feast to be made ready, and there was merrymaking for a whole week.

After this Aladdin and his wife lived in peace. When the Sultan died, Aladdin ascended the throne, and ruled for many years.

The end.

6-1 Choi First Writing

In ten years...

I have a great vision for my future.

I always think and imagine that I would become a good English instructor.

But it's so hard for me to study and work at once.

So I strain to reach my goal now.

And I'm also able to imagine that I would become a wife and a mother.

I'm concerned on the education of my future children.

I want my children to get a good education.

Although I can be a good instructor, I may not teach my children well.

6-2 Choi Second Writing

A long time ago, in a faraway land, there was a prince who lived in a shining castle. Although he had everything we wanted, he was rude, haughty and heartless. One day an old beggar visited him to ask for a

quarter. She said if he gave her a place to rest she will give him a rose, but he rejected her offer because of her ugly appearance. She warned the young prince that a person cannot be judged by his outer appearance, it is what is inside of him that matters. Still, the prince did not approve.

Suddenly the ugly beggar changed to a beautiful enchantress. The prince was so surprised and tried to apologize, but it was too late. The enchantress was so angry that she casted a magic spell on him, turning the young prince into a frightful beast and all who lived in the castle feared him. He became sad, pitiful and ashamed so he concealed himself inside his castle. He didn't try to come out. He could see the outside only through his magic mirror.

The rose she gave him was a magic rose, which will bloom on his twenty-first year of age. If he fell in love with a woman and was loved in return before the last petal falls, the magic spell cast on him will disappear. If not, he will live as the beast he is now forever.

The question is who can fall in love with an ugly beast?

7-1 Han First Writing

W : Hello~!

M : Hi~ This is Rovert. Do you remember??

W : Ro..ver..t?? I'm sorry, I don't know who you are.

M : We met in the shop this afternoon.. The dress...

W : Oh, yeah~.. I got it.. I remember!

Well.. How did you get my number?? What's the matter?

M : Nothing.. I just.. thought the dress was just for you.

W : Thank you.

M : I've sent it. I just want you wearing the dress.. Can you understand?

W : Thank you for your kindness but I can't get it.. Why did you do that?

7-2 Han Second Writing

Aladdin finally got the lamp. After he overcame all defficulties. eventually,he got married Jasmin. And then they had been living together happilly.

But it was not durable thier happiness. They had a feeling tedium each other.

So Aladin decided to take a trable around the world riding his magic carpet with jasmine and abu.

Someday , they reached a castle. It was cast spell on the castle.

They were fearful and curious from there.

4. Pretest and posttest

Directions: In this part of the test you will hear a question spoken in English, Followed by three answers, also spoken in English, the question and the answer will be spoken just one time. They will not be written out for you; therefore, you must listen carefully to understand. You are to choose the best answer to each question.

Now listen to a sample question:

You will hear:

You will also hear:

Sample Answer

*

(a)(b) (c)

The best answer to the question,"What time is it?" is choice (a), It's nine-thirty." Therefore you should choose answer (a).

Script

1. Let me buy it for you.

    a. No, thank you.

    b. That's too bad.

    c. I want to

2. You ought to have that dress.

    a. I had fun.

    b. It doesn't suit me.

    c. You made a mistake.

    3. The house is for sale.

        a. When is it open?

        b. When does the sale start?

        c. How much is it?

    4. I enjoyed reading the book.

        a. Would you like to read it?

        b. What was it about?

        c. You deserve it.

    5. I can't afford it.

a. That’s too bad.

b. It takes too long.

c. You will love it.

6. I don’t mind doing it for himn

a. I owe you nothing

b. He works hard.

c. It’s nice of you.

7. How long will the machine last?

a. It will last a lifetime

b. It’s the latest model.

c. I sold the last one.

8. Let’s test the assumption.

a. What else do you do?

b. Yes, Let’s do so.

c. I did well on the test

9. Who made the decision?

a. You will regret it

b. I will not decide it.

c. We both did.

10. The lights went off.

a. I can fix them.

b. It’s too heavy.

c. He will buy them

11. I’ve been working on the math problem

a. I have to find it.

b. You are kind.

c. Is it difficult?

12. Did you turn the lights off?

a. No, they just went off.

b. Yes, he did.

c. I’m off to go.

13. Who is she?

a. Someone who works for me

b. She doesn’t live here.

c. She works hard for the money.

14. Why did you offer him the job?

a. Because he was incompetent.

b. Because I needed his help.

c. Because he didn’t care for the job.

15. Who has the right to vote?

a. No one was right.

b. I was wrong.

c. Anyone over twenty.

16. Would you take care of my plant while I'm gone?

a. Gladly, don't worry.

b. I will plant roses in my garden

c. Take care of yourself.

17. Could you lend me your tool?

a. Sure, it's in the garage.

b. No, I couldn't borrow it.

c. Yes, the land belongs to me.

18. I don't think it's such a good idea

a. What's wrong with it?

b. Thank you for the good idea.

c. It didn't occur to me.

19. You collect antiques, don't you?

a. I don't agree with you.

b. Yes, I do.

c. No, it's not good for you.

20. I want you to sell it back to me.

a. I don’t want it back.

b. I didn’t sell it.

c. No, I’d rather keep it.

Dictation of Sequence Three

Robert Redford: Why don’t you put it on? It suits you.

Demi Moore: Well, I can’t afford it.

R.R.: That’s too bad.

D.M.: Yeah.

R.R.: I really think you ought to have the dress Let me buy it for you.

D.M.: You want to buy me this dress?

R.R.: Yeah.

D. M.: Why?

R.R. I’ve enjoyed watching you. You’ve earned it.

D.M:No I haven’t. The dress is for sale, I am not.

Answers

1.a 2.b 3.c.4.b 5.a 6.c 7.a 8.b 9.c 10.a 11.c 12. a 13.a 14.b 15. c 16. a 17.a 18.a 19.b 20.c

ABSTRACT

The purpose of this study is to investigate, quantitatively as well as qualitatively, the extent to which the influence of instructional designs is exerted on the learning outcome within the framework of computer assisted language learning (CALL).

For the current project, three CD ROMs were developed and tested that emphasized different instructional designs. The first one tested was Mechanical (MI), the second Communicative (CI) and the third Meaningful and Communicative (MCI). The comparison of these three CD ROMs showed the usefulness of instructional design for creating effective methods for teaching second languages in Korea. Prior to exploring the strengths and limitations of the three different module CD ROMs, a review of SLA theories and their applicability in the contexts of interdisciplinary perspectives to CALL was undertaken.

The results based on the quantitative and qualitative analyses are revealing. A two-way ANOVA analysis based on the two dependent variables including instructional designs and English score strongly suggests that the impact of instructional designs is statistically significant. The analyses indicate that MCI and CI are significantly

more effective than MI, and that CI is as effective as MCI. This revealing research finding implies that the instructional design of CI, which is less time-consuming to implement than MCI, can serve as a feasible approach to successful English education.

Both the highest posttest score and lowest posttest score students in each group (MI, CI, MCI) were interviewed. In the case of higher level students, the qualitative analysis of interviews showed that there were many coding references of how to speak English well; but there were no coding references of the reason why they did not speak English well. In the case of lower level students, on the other hand, there were many coding references of why they did not speak English well; but there were few coding references of how to speak English well. Error analysis of two homework assignments indicated that their overall writing skill improved. The results based on the quantitative and qualitative analyses reveal significant implications for more effective English. Suggestions for future research are also discussed.

국문초록

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본 연구의 목적은 컴퓨터 보조 언어학습(CALL)의 틀 내에서 다양한 교수설계가 학습결과에 미치는 영향의 정도를 양적 분석과 질적 분석을 통해 밝히는데 있다. 이를 위해 교수설계가 다른 세 가지 시디롬을 제작하였다. 첫 번째 시디롬은 기계적인 시디롬(MI)이고, 두 번째 시디롬은 상호작용이 있는 시디롬(CI), 그리고 세 번째 시디롬은 의미 있고 상호작용이 있는 시디롬(MCI)이다. 이 세 가지 시디롬의 비교는 제 2언어를 한국에서 가르치는데 교수설계가 유용하다는 것을 보여줄 것이다.

세 가지 시디롬을 연구하기 전에 제 2언어 습득이론을 학제간 연구의 틀 안에서 분석해 보았다. 언어 입력(input)은 이해될 수 있을 뿐 아니라 확실(authentic)해야 하며, 언어 출력(output) 또한 학생들의 진보를 평가하는데 중요한 자료를 제공한다. 따라서 이해될 수 있는 출력(output)을 만들어 내는 것은 언어학습의 중요한 목적이다. 대부분의 교수설계는 ADDIE 모델로 시작한다. ADDIE란 분석(Analyze), 디자인(Design), 발전(Develop), 이행(Implement), 평가(Evaluate)를 의미한다.

본 연구에서는 양적 연구와 질적 연구가 이루어졌다. 분석결과를 요약하면, 교수설계와 영어 성적간의 양방향 ANOVA 분석은 교수설계의 영향이 통계적으로 중요하다는 것을 보여주었다. MCI와 CI가 MI 보다 훨씬 더 효과적이며 CI도 MCI와 마찬가지로 효과가 있었다는 것을 보여 주었다. 본 연구에 의하면 MCI에 비해 이행시 시간소요가 적게 드는 CI의 교수 설계가 성공적인 영어교육에 유용한 방법이라고 볼 수 있다. 각 그룹(MI, CI, MCI)에서 점수가 가장 높은 학생과 가장 낮은

학생을 인터뷰하였는데, 이 인터뷰의 질적 분석은 성적이 높은 학생들의 경우 영어를 잘하는 방법의 응답빈도수가 많이 있고, 영어를 못하는 이유에는 응답빈도수가 없었다는 것을 보여주었다. 한편, 성적이 낮은 학생의 경우 영어를 못하는 이유에는 응답빈도수가 많았고, 영어를 잘하는 방법에는 응답빈도수가 거의 없었다. 두 가지 숙제의 오류분석은 학생들의 전반적인 쓰기 능력이 향상되었다는 것을 보여주었다. 본 연구의 결론에서는 양적 질적 연구에 기반을 둔 본 연구가 한국 영어교육에 시사하는 바와 향후 연구방향에 대해 논의하였다.