

ENHANCEMENT OF PRESENTATION OF CHINESE NARRATIVE POEMS—
USING A MULTIMEDIA MODEL FOR “MULAN SHIH”

By

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A DISSERTATION PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

2004

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Minchu Chen

This dissertation is dedicated in loving memory of my father, Po-Liang Chen, and my
husband, Chung-Hsing Hsu

ACKNOWLEDGMENTS

Incessant thanks and praises go to God for all His graces to me throughout the five-year study in the doctoral program.

Also, I would like to thank many people who played an integral role in helping me complete my doctoral program and the completion of this dissertation. First of all, I would like to thank my family for their endless, unwavering mental and financial supports and for their encouragement. Specifically, I am grateful to my husband, Chung-Hsing Hsu, for his loving support, patience, tolerance and unconditional love for me during the difficult time throughout my study. Moreover, I would like to express my deepest appreciation to my dear sister, Susan Hsieh, whose guidance of English writing is constant, unique, and superior. A million “thanks” go to Susan, and to her husband, Shi-Yih Hung, for their generosity in sharing their precious family time with me to navigate me through the endless editing of my dissertation and to ease my homesick heart.

Secondly, I would like to acknowledge the support and scholarly guidance from my doctoral advisory committee: Dr. Jeff Hurt, Dr. Mary Kantowski, Dr. David Miller, Dr. Sebastian Foti. A special “thank you” goes to Dr. Hurt, my advisor; it has been my pleasure to work with and learn from him. Also, Dr. Kantowski has been a gentle mentor throughout my graduate study; her compassion as well as her guidance for graduate students has been an inspiration to me. I am grateful to Dr. Foti for his candid and constructive comments and for his consideration and appreciation for international

students. In addition, I am blessed to have Dr. Miller as an amazing instructor of research statistics.

Finally, I would like to mention Dr. Gail Ring and Mr. Noahjohn Dittmar for their indispensable technical support in this study. I am grateful to show my heartfelt thank you to Mr. Dittmar for his permission to conduct this research study in his two English classes at the P.K. Yonge Developmental Research School in Gainesville, Florida. Most of all, I would like to thank Naglaa Ali, my best classmate and friend throughout my doctoral study, for her unwavering love and support during my sickness and study.

If this program was a success, they deserve all of the credit!

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Abstract of Dissertation Presented to the Graduate School
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree of Doctor of Philosophy

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By

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May 2004

Chair: Jeff Hurt

Major Department: Teaching and Learning

The general consensus of educators of Chinese narrative poetry is that students lack interest in learning classic poetry. Students seem unappreciative of the importance of morals found in the poetry and seem unable to relate these morals to their personal life experiences. One of the reasons students lack the motivation to learn Chinese narrative poetry may be due to the most commonly applied method for teaching poetry, the expository approach. Possibly as a result of using this method of instruction, students lose their concern for the importance of the poetic morals behind the narrative poems.

The purpose of this study is to compare the effects of a varied sequence of two delivery methods—expository and multimedia—applied in the teaching of Chinese narrative poetry.

Its intent is to generate a more effective instructional framework for the teaching of Chinese narrative poems. The study’s intent is not to decide which method (expository and multimedia) is better in teaching Chinese narrative poems.

This research concentrates mainly on testing the effects of teaching Chinese narrative poems through different sequence of the two models in hopes of generating more interest in Chinese narrative poems' teaching and learning. In this study, a specified narrative poem, "Mulan Shih," will be taught with a selected multimedia product as well as traditional printed material.

This study provides a theoretical framework for teaching a Chinese literature curriculum. This type of study introduces a new approach to Chinese literature teaching. It is significant in Chinese education in that this study will be extending the perspective of Chinese literature instructions.

The findings add support to the hypothesis that Chinese literature teaching can be supported by multimedia technology which encourages interactions between instructors and students. Alternately using multimedia and expository provides an effective approach for teaching Chinese narrative poems.

CHAPTER 1 INTRODUCTION

Statement of the Problem

Developments in multimedia technologies are reforming modern literature education. With modern technology, it is possible to deliver lectures, make assignments and provide information to anyone who has a modem and a computer (Rose, 1996).

A national report on technological literacy states that “computer skills and the ability to use computers and other technology to improve learning, productivity, and performance has become as fundamental to a person’s ability to navigate through society using traditional skills like reading, writing, and arithmetic” (U.S. Dept. of Ed, 1996). From the instructional perspective, multimedia technologies can positively impact on-demand services, assessment techniques, and instructional strategies.

Chinese narrative poetry is one area of instruction that could benefit from the above-stated potential impacts of technology. The study of Chinese narrative poetry is a very important component of Chinese literature; narrative poems, unlike other poetic forms, contain the characteristics of poems, literary essence, historical events, Chinese culture and legends. Moreover, the poetic morals embedded in the poems display a timeless value (Liu, 1976). Some of the narrative poems have become part of the text book for middle school and college in Taiwan. For instance, “Mulan Shih” (木蘭詩) from the Yueh-Fu (樂府) in North Dynasty and “Peacocks heading Southeast” (孔雀東南飛)

from Yueh-Fu in South Dynasty, both became popular and well-known throughout generations.

The general consensus of educators of Chinese narrative poetry is that students lack interest in learning classic poetry. Students seem unappreciative of the importance of morals found in the poetry and seem unable to relate these morals to their personal life experiences (Liao & Tsang, 1995).

One of the reasons students lack the motivation to learn Chinese narrative poetry may be due to the most commonly applied method for teaching poetry, the expository approach. Possibly as a result of using this method of instruction, students lose their concern for the importance of the poetic morals behind the narrative poems.

Research shows that students tend to remember characters and phrases as distinct pictures, and depict the process of content in order to get the exposition of a poem (Chuang, 1975). Nowadays academic institutions are encouraging the use of pictures for literature and language instruction (Multimedia Language Center 2004). The key to successful presentation of a certain literary topic may lie in the instructor's approach to instruction. Passively hoping that a student will discover appropriate learning methods without any guidance is no way to ensure successful learning and development. Instead, developing and constructing the applications of traditional text and multimedia material should be considered. Appropriate technologies can be used to enable teachers to provide students with choices as to when, where, and how they access their knowledge in learning Chinese narrative poems. These choices allow students to apply techniques that help organize and advance the learning event (Multimedia Language Center 2004). Therefore,

teaching Chinese literature can be supported by multimedia technology which encourages interactions between instructors and students (Liao & Tsang, 1995).

Instructors attempt to make a lesson appealing to students by using clear and well-constructed interaction so students can fully absorb and enjoy the topic. Many of the printed or hypertext materials concerning Chinese narrative poetry specify the narrative poem in a traditional way. Graphics from hyper media on the Internet is sometimes used when conducting a teaching activity in Chinese narrative poetry (Classical Chinese Poetry, 2004).

Alternately using multimedia and expository may provide a new approach for teaching Chinese narrative poems. This does not imply that a multimedia approach is better than expository in teaching Chinese narrative poems, but it suggests that multimedia can provide a strong support through increasing the students' interest.

Constructivists state that logical analysis of actions and objects leads to the growth of knowledge and one's individual experiences and helps to generate new knowledge (Brooks & Brooks, 1993; Hargis, 2001). A solid theoretical foundation offers instructors a good foundation from which to build a series of learning formats in response to different learning styles. In short, constructivism encourages a wide range of strategies through the use of multimedia production, which offers increased human interactions during instruction to encourage successful learning. Moreover, innovative construct provides direction to incorporate appropriate technologies that lead to new learning environments for students. That is, in constructivism, instructional contents are designed based on the natural development of humans' senses of vision, hearing, touching, taste, and smell to relate to their learning experience in life (Fabricius, 1983; Hargis, 2001).

There are numerous ways that a teacher can design his/her lectures, and multimedia is becoming a popular option. However, this study will not discuss the validity of multimedia supports. Instead, the goal of this research concentrates on the efficiency of combining both expository and multimedia methods in a classroom instruction, and the influence of the sequence of the methods involved.

Purpose

The purpose of this study is to compare the effects of a varied sequence of two delivery methods: expository and multimedia.

The intent of this study is to generate a more effective instructional framework for the teaching of Chinese narrative poems, not to decide which method (expository and multimedia) is better in teaching Chinese narrative poems.

Although similar topics have been explored by other researchers (Curriculum Development Committee, 1984, 1990), this research concentrates mainly on testing the effects of teaching Chinese narrative poems through different sequence of the two models in hopes of generating more interest in Chinese narrative poems' teaching and learning. In this study, a specified narrative poem, "Mulan Shih", will be taught with a selected multimedia product as well as traditional printed material.

Significance of the Study

This study provides a theoretical framework for teaching a Chinese literature curriculum. This type of study introduces a new approach to Chinese literature teaching. It is significant in Chinese education in that this study will be extending the perspective of Chinese literature instructions.

The impact of this study for teaching Chinese literature could be the following:

1. The instructor will make decisions concerning the sequence of the teaching methods used in the class, which might engage students' interest in learning literature.
2. The instructor may develop multimedia materials and make decisions concerning how to apply them to the class.
3. The instructor reorganizes the literature materials in order to integrate them into the renewed teaching sequence. For instance, the instructor can determine whether a student has grasped the knowledge or not so as to interpret the complexity of a narrative poem.

The significance of this study is to offer a conceptual framework for instructors regarding what they should prepare in order to utilize an innovative approach to literature instruction and to assist them in deciding what students should know and do in terms of projects, course requirements, and documentation of class notes.

Definition of Selected Terms

For the purpose of this study, the following terms are defined:

Expository approach. A teaching method that uses a lecture or an oral explanation to illustrate the contents of a given class.

Narrative. A story in a Chinese narrative poem, which may include a historical event or a legend.

Storyboard. A graphic, sequential depiction of a narrative.

Story. A traditional way of storing and describing memories and experiential knowledge. Humans give meaning to their experience of temporality and personal actions. It is humans' innate ability and predisposition to organize and represent the experiences of their lives.

Symbol. The representation of one thing for another; in Chinese poems it usually appears in a two-word group.

Symbolism. The art of communicating a message using minimum words; that is, through the use of semiotics (word symbols). In ancient times, symbols were used to represent things, especially in art and literature. And the meaning of a certain symbol is passed down from generation to generation. For example, any object with a dragon design represents the emperor himself and should be treated with fear and respect.

Expressions. A way to reflect the hidden morals through a pair of five-word-groups, which are well-known and frequently quoted phrases from Chinese poems.

Metaphor. Use of a word or a phrase to indicate something different from the literal meaning.

Simile. Use of comparison of one thing with another.

Chinese phrases. Specific descriptions to the literary situation, and can be formed by nouns, verbs, adjectives, or adverbs.

Multimedia. Supporting-educational materials such as video, audio, slides, transparencies as well as overhead projector equipment, computer software, and CDs.

Electronic storybook. “Stories are represented and integrated through technology so that the combination can lead to a more multi-literate approach to instruction.” (Chen, Ferdig & Wood, 2003)

The Hypothesis of the Research

The expository approach to teaching has been applied for many years in Chinese literature classes. However, research suggests that the use of multimedia can augment the teaching of Chinese literature by employing a range of images, animations, video tapes, audio tapes, slides, computer software, and/or CDs (Liao & Tsang, 1995). This study will examine the effectiveness of two different instruction methods that combine expository and multimedia approaches. Specifically, this study examines whether the sequence of

application of expository and multimedia will have a significant effect on students' ability to learn a Chinese narrative poem.

Sequence 1. Apply multimedia before expository approach. (multimedia—expository)

Sequence 2. Apply expository approach before multimedia. (expository—multimedia)

The hypothesis in this study is that the sequence in which the two methods are presented will impact students' ability to learn a Chinese narrative poem. Specifically, using a multimedia presentation before employing an expository presentation is more effective in teaching a Chinese narrative poem. That is, sequence 1 (multimedia—expository) is more effective than sequence 2 (expository—multimedia) for students' learning. The null hypothesis is that there is no impact in sequence of use of multimedia and expository in students' ability of learning.

Limitations

The limitations of this study are as following:

1. This study utilized fifty students enrolled in an 11th grade English literature class. Thus, the results of the study can be generalized only to students at commensurate levels.
2. The classroom instructor in this study has significant technological knowledge so that he can perform the teaching in multimedia method without any problem. However, we can not assume that every literature teacher has the same skills in applying multimedia method in the class.
3. Only one literature topic ("Mulan Shih", a Chinese narrative poem) is tested in this study to examine the effect of the proposed sequences. Different results might be observed if different topics were involved.

CHAPTER 2 LITERATURE REVIEW

Sequence as An Instructional Variable

In modern education, sequencing of teaching methods has been regarded as an important instructional variable (Tennyson & Tennyson, 1977). An appropriate sequence will improve the quality of learning significantly. For example, expository teaching combined with lesson-related activities has been proved to be very effective (Yaden, Smolkin & Conlon, 1989). In fact, constructive learning theory indicates that sequencing can lead to the growth of students' knowledge (Cheek, 1992).

The effects of the sequence used in an instructional activity have been addressed in research literature. A study on teaching mathematics using two methods of presentation that differed primarily in terms of sequence characteristics reported significant variance in students' learning (Thornell, 1977). Another study showed that the sequence of an activity appears to be important, and the sequential approach is an instructional format for enhancing the ability of students' learning (Renner, 1983).

Tennyson studied the effectiveness of the students' learning experience using three methods of sequencing coordinate concepts; they are simultaneous method, collective method, and successive method (Tennyson, 1977& 1985). His data analysis showed that students' performance is superior in one sequence over the other two. In fact, the study concluded that the simultaneous sequence was more time efficient in terms of students' learning (Tennyson, 1985).

Specifically, teachers could test the efficiency of their teaching by alternating the sequence of their teaching methods as a variable in instruction format. Gulmans and van den Berg did a similar study about the effectiveness of two different instructional modes in various sequences and concluded that the sequence is an important variable in instruction (Gulmans & van den Berg, 1992).

Based on the research, it can be concluded that sequence is a significant independent variable in instruction which critically impacts the effects of instruction. Therefore, the decision that is made concluding the sequence of teaching methods can be a very important element for successful instruction.

Visually-Enhanced Instructional Environment

Paivio defined learning and cognition as a dual coding theory, in which verbal and image-based information is recognized and perceived by separate, interrelated processes. The verbal information just mentioned is relatively abstract when compared to the image-based information and it is also dependent on shared definition for particular terms, whereas the image-based information is more of a tangible representation of objects presented in a special way. As a result, a verbal system is often learned and used in an associative mode, while imagery is imitated through referential means. For instance, conversations rely on common definitions of both the analogue (or similar objects) and the targeted terms (Paivio, 1971; Glynn, 1994). Moreover, the relationship between elements within the analogue is related to the targeted terms, which determines the effectiveness and the appropriateness of the analogy. As terms become less relevant, the use of the analogy is diminishing and can lead to students' misconceptions (Glynn, 1994; Pyle & Akins-Moffatt, 1999).

Image-based Information. Images play a critical role in how we come to shape the world around us. Phrases such as “seeing is believing” and “a picture is worth a thousand words” abound in our language, and they are good examples of the importance of the image, especially when implied in language instruction (Peterson, 1997; Sutton, 1992; Woodward, 1989). When learning a new language, the image of a new word deeply affects the vocabulary in terms of students’ learning (Sutton, 1992). To be exact an image requires concrete referential representations in order for a new word to be understood and, later, implemented correctly.

Images have shown their value as assessment tools in exploring students’ learning and conceptual change (Peterson, 1997). However the role that images serve in this learning process is not well understood. Traditionally, most learning styles have relied heavily on language-based forms of teaching and assessment. This practice makes it ineffective in determining the level of students’ understanding of certain concepts if they have not mastered the language used to represent the concepts (Sutton, 1992). This situation frequently happens in learning of literatures in a different language. Therefore, the question as to whether a student’s level of literacy is determined by his fluency in the language or by his ability to use the concepts which influence decisions, thoughts, and feelings must be asked. This question relates directly to the topic of this study.

The image of a symbol needs to be a stable element in a student’s mind before he is able to apply it in future learning experiences. However, if the concept is not associated properly through the representation of an image, that is, if the image makes an unprecise connection, the image itself might become the source of misconceptions (Astronomical Society of the Pacific, 1992). Thus, an image could be worth a thousand words, but it

could also confound students' thinking more than text. The concept expressed through the vocabulary is the first step for a person in shaping his/her recognition of an object. During this process, the image acts as an aid in enhancing an understanding of that word. Normally, verbal and image systems are interrelated, especially at concrete levels (Paivio, Clark, & Lambert, 1988). As concepts become more complex and abstract, it is difficult to develop representative images. For example, fear and pain have concrete referents such as physical feelings, facial expressions, or injury (Koballa & Pyle, 1996); however, it is difficult to express relief, love, etc. using an image (Paivio, 1971).

The Impact of Multimedia on Academic Instructions

New technologies and multimedia have been playing an increasingly important role in education (Mayer, 2003). The term "multimedia" refers to the combination of multiple technical resources for the purpose of presenting information represented in multiple formats via multiple modalities (Goldman, 2003). Studies exploring the impact of using multimedia on instruction have been ongoing (Raat, 1992). Efforts to understand how learners capitalize on verbal and visual information are not new (Levie & Lentz, 1982; Mandl, & Levin, 1989; Willows & Houghton, 1987). However, researchers are concerned with how students make sense of important concepts based on verbal and visual input information (Schnotz & Lowe, 2003; Reimann, 2003).

Basically multimedia has been used broadly in three major categories: video-audio materials, visual-enhanced supplement and computer-based learning environment (Goldman, 2003). Researchers contend that multimedia resources can be categorized into three different levels: the technical level refers to the technical devices (i.e., computers, networks, displays, etc.) that are the carriers of instructional signals; the semiotic level refers to the representational format of those signals (i.e., texts, pictures, and sounds); the

sensory level refers to the sensory modality of signal reception (i.e., visual or auditory modality). The three levels of multimedia resources just mentioned give instructions a different perspective in the complex domain of education (Schnotz & Lowe, 2003). This indicates that multimedia resources have the capability of supporting learning in complex domains because they could show learners how variables interact and relate to one another. However, studies also showed that students could fail to learn what the designers intended just as easily from multimedia as they could from single media (Cognition, 1996; Kozma, 1994). That is, merely showing the learner a dynamic process does not effectively guarantee understanding in the process of learning.

Mayer states that there are three processes in which the student needs to engage if learning is to occur; those processes are visual information (static or dynamic), verbal information, and the combination of visual and verbal information. However, these three processes are difficult to carry out when learners are novices in a domain, because they often have no experiences or prior knowledge (Mayer, 2003). Mayer's research states teachers should make arrangements of verbal and visual information, highlight important relationships, remove irrelevant information, and manage the information so that students tend to produce better learning. These effects override the static-dynamic dimension of visual information; Mayer found that there is very little benefit from using dynamic visuals in some domains that he investigated (physical devices). However, in other domains (such as chemistry) the dynamic properties of visual displays may be more powerful since they convey information that is much harder to access from static visuals or from verbal descriptions (Mayer, 2003). Mayer's contribution focused on multimedia presentations that contain spoken or written words combined with illustrations or

animations that are designed to foster meaningful definitions. Mayer presented an assumption of multimedia learning in which the active learning is emphasized. He predicted that students learn more efficiently from words and pictures than from words alone. According to Mayer's study, he found meaningful learning requires that the student engages in active cognitive processing. Active processing requires the learner pays attention to relevant words and pictures, and then organizes the corresponding information into coherent verbal and pictorial mental representations. Finally, all works were integrated into verbal and pictorial representations. Furthermore, Mayer simulated the experimental conditions in which students would profit more from multimedia messages than from verbal-only messages.

Mayer's research helps us understand some of the consistencies in the processing of verbal and visual information. The result of his study indicates that the potential impacts of the instruction might be obvious to students through different media. That is, computer-based media show support for instruction which is not available in traditional expository methods. Secondly, it is apparent that during multimedia instruction more aggressive interactions between the instructor and his/her students take place when the lecture is delivered through educational technologies.

Mayer's findings are not confined to "high-tech" media; his theory and instructional principles also apply to both book-based and computer-based learning environments. Although some forms of advanced technology are compatible to instructional methods, the general principles of instructional design are more crucial. The potential effectiveness of educational multimedia materials is therefore likely to be influenced by the teacher's design of his/her lecture.

Schnotz and Bannert proposed a combined model of text and picture comprehension that contributes to a theory of multimedia learning (Schnotz & Bannert, 2003). In contrast to Mayer's model, the model developed by Schnotz and Bannert includes a basic distinction between descriptive and depictive representations. They predicted that adding pictures to a text may not always be beneficial for learning but is rather distracting. This would mean that while task-appropriate illustrations are likely to support learning, task-inappropriate illustrations may actually interfere with the mental-model-construction-processes that support effective learning. This assumption contradicts the traditional implication drawn from Paivio's (1986) dual coding theory that adding pictures to a text is generally beneficial for learning. Their empirical findings confirm the prediction of a possible detrimental effect resulting from task-inappropriate illustrations. Paivio's study suggested that pictures facilitate learning if the individual has limited background knowledge and the subject matter is visualized in a task-appropriate way. However, if the individual is knowledgeable in the related subject, and the subject is visualized in a task-inappropriate way, then these illustrations may actually interfere with learning. Schnotz and Bannert's findings emphasize the need for careful consideration of the type of visualization to be used when designing instructional material. Carefully considered visualizations are important not only for individuals with limited background knowledge who might need pictorial support in constructing mental models, but also individuals who are knowledgeable in the subject because these individuals may be hindered in their mental model construction through inappropriate forms of visualization.

Review of Similar Research

During past years, more and more instructors and professionals have been involved in the design, use, and development of multimedia technology for teaching Chinese.

Meanwhile, the discussion of multimedia technology in the classroom has become popular for improving Chinese language and literature teaching. There is a trend for a new approach to teach Chinese literature using computer software instead of a blackboard, and thus eliminate the need for a textbook and handwriting in the early stage of learning Chinese literature. To determine whether or not this is feasible or applicable, more research is needed concerning the integration of multimedia technology with teaching curriculum.

Chinese Characters as Structured Compositions. Chinese symbols are not arbitrary aggregates of subjectivity. Many characters are pictographs standing for objects, or pictographs with certain markings added to indicate more abstract concepts (Shuowenjiezi, 100, Weiger, 1915; Hung & Tseng, 1981).

Studies shows that at an early stage in the learning of Chinese characters, students tend to remember characters as distinct pictures (Chuang, 1975). Most Chinese characters are composite logographic forms. In these compound characters, two or more major components are combined to fill an imaginary square block; many of them are themselves characters. The methods of such composition followed a pre-set standard. These methods can be repeated and applied in producing different phrases from characters. In general, the components also contribute to the pronunciation or the meaning of the compound phrases.

The “logographic information module” contains a database of logograms, including Chinese characters, definition of Chinese characters (equivalent to the alphabets in English responsible for pronunciation), graphemes and strokes (Ki, 1994). It records how each logogram is stepwise-decomposable into other simpler logograms, and the

composition method. In the case of pictophonetic¹ composition, it also takes note of the specific subcomponents of a Chinese character contributing respectively to the pronunciation and the definition of the character. Pictorial origins of Chinese characters are stored as graphic animation where appropriate. The information mentioned above is stored in the logographic information module and will support the following operations:

1. To give a stroke-by-stroke calligraphic display of the character.
2. To provide a stroke ordering exercise where students can choose the correct stroke sequence in a character with continuous feedback from the computer.
3. To display the character, highlighting in turn the different components and subcomponents in the sequence of the stroke-by-stroke order.
4. To support jigsaw-like exercises where the student is asked to assemble characters from their corresponding components.
5. Partial matching to search for a character based on partial information given about its structures and components.
6. To present the pictorial origins of some characters. The presentation starts with a realistic picture, and gradually transforms it to a basic skeleton of an intended Chinese character, and then to the final form of the well-recognized character. The method is similar to that used in Lam (1993).

The “pronunciation and meaning module” links a set of characters to a set of phrases which illustrate the definition of the character. In fact, a voice file and a phoneme are stored for the pronunciation of each character in the knowledge-base database. Also, for the special cases in which a character is pronounced differently and is used in a different sense, a number of voice files and phonemes will be stored. Furthermore, for some of the phrases, additional resources are stored including images

¹ Pictophonetic composition means one component represents the meaning while the other component represents the sound of the compound character. This is the called pictophonetic composition. Over 70% of Chinese characters are compositions of this sort.

and voice files of sample sentences. In addition, for each selected Chinese character and phrase, there is information in the file concerning its definition and its difficulty level (in scholastic sense). All in all, the above information mentioned is used to support the following functions:

1. Display related phrases to illustrate the possible definitions of a Chinese character.
2. Enunciate the selected characters and display associated phrase(s) stored in the knowledge-base database.
3. Read aloud example sentences or display a picture that depicts a related example particular phrase.
4. Search for other Chinese characters that have identical pronunciation (or homonym).
5. Search for selected Chinese characters based on given partial information on phonemes.
6. Search for particular phrases according to their synonyms, and their level of difficulty (in scholastic sense).

There is a computing module called “Chinese language syllabus for primary schools”, which can provide relevant information for 500 frequently used Chinese characters selected from the standard school curriculum for native Chinese youths in HongKong (CDC, 1990). It was assumed that by learning these 500 characters in the way supported by this computing module, the mental “tool-kit and library” of each student can be developed and can thus enable him/her to learn related Chinese language courses proficiently (Shiu & Lau, 1982; Tseng & Wang, 1983)

In an early project working with the software for learning Chinese characters (Lam, 1993), computer animation was used to relate the written form of some Chinese characters to their pictorial origins. The preliminary evaluation indicated that this kind of presentation stimulated the student’s mind effectively in helping him/her to remember the

written form as well as the meanings of the characters (CDC, 1984). The available multimedia technology today, which can be applied in the Chinese language teaching are:

Entry level-pronunciation. There are some computer software program developed for this purpose. For example, “Hyper Chinese” is a program designed to help students with their learning and distinguishing various pronunciations of the Chinese characters. Students learn each sound through voice demonstration, imitation and comparison. Quizzes are offered as a drill to check their progress. There is also an educational CD called, “Professional Interaction Chinese for Windows with Speech Recognition”; which has the added advantage of showing mouth and tongue positions through animated visual displays. Thus, this CD can place the user in the context of a particular scenario for visual and audio guidance. (Fu, 1996)

Intermediate and advanced level. The majority of software program available are designed for this stage. “Chinese Breakthrough” is a set of audio-visual programs for TV and newspaper reading, and the Chinese version of “WinCalis” is a very useful programming tool for designing various Chinese exercises. In addition to those programs mentioned above, there are other electronic materials on the Internet that are popular with some instructors.

It is widely recognized that the limitation of many teaching and learning materials is that the program does not really take the student’s past experience and competence into account. There is a computerized system that offers supports to the classes mentioned above (i.e. from entry to advanced level) and is known as the “knowledge-based multimedia system,” (Ki, and others, 1994). This system has five subcategories.

The first subcategory involves introduction of Chinese characters and is designed for entry level students.

The second subcategory is “the student progress database” set up to record the students’ progress. The objective is to set up a database that records complete record of each student every time he/she log in, and evaluate his/her competence through his/her interactions with the system. Data will be automatically sent onto this database when students use the various modules at this level. This database is to provide feedback to students, to allow the instructor to monitor the progress of students, and to provide tangible information to the software developers to create appropriate software for future use.

The third subcategory of this system is “database tools.” This is a set of application software that allows both teachers and students to modify, customized and accesses the related programs.

The fourth subcategory is “CAL generation tools.” This is a set of software generation tools that can produce instructional software in specific formats. In fact, the teacher only has to choose between audio-visual aids or slide type, and specify the required language elements such as vocabulary, phrases, and expression to be used. As a result, a customized interactive software will be automatically generated. The teacher would get the instruction from the software sufficient to generate a CAL program.

The fifth subcategory is “CAL materials.” This is a set of example interactive software and self-learning materials, including both computer-based and non-computer based. It is developed using the tools provided at lower levels such as: “the student progress database” and it illustrates how the generic tools used in the lower levels can be

used to achieve specific learning objectives. Moreover, CAL materials include learning materials that introduce new characters, phrases, and other information that is relevant to particular topics. These topics involve Chinese characters as new vocabulary, introduce particular language skills, games for drill or for skill reinforcement, and tests. While these interactive software programs are being used on the computer, this system is able to update the student's progress database at the second level of the system. Therefore, students can have the option of moving from the interactive software to the student query tool for reference or for help.

Constructivism in the Design of Instruction

The application of appropriate educational learning theories is very critical for instruction in any field. A solid theoretical foundation offers teachers a good start from which they can build a series of learning formats in response to different learning styles and, hence, encourage a wide range of strategies in order to insure successful learning. Likewise, innovative construct provides direction to appropriate technologies that lead to new learning environments, and provide a customized curriculum for all students.

Theories generally have assumed that processes of learning and thinking of average people are relatively uniform. Meditations derived from knowledge and skills obtained through hands-on experience are more efficient than the mental image delivered from theoretical concepts (Schunk, 1996). In fact, Locke (17th to 18th centuries) taught that no man's knowledge can go beyond his experience.

The basic foundation philosophy of constructivism for modern day is generally credited to Piaget (1896-1980). In Piaget's view, human intelligence consists of two interrelated processes, organization and adaptation. People organize their thoughts so that they make sense, separating the more important thoughts from the less important ones, as

well as connecting one idea to another. At the same time, people adapt their thinking to include new ideas, as new experiences provide additional information.

Constructivist theory in education is a branch of neo-Piagetian thought. (Novak, 1977; von Glasersfeld, 1989). The constructivist approach is a view that emphasizes the active role of the learner in building understanding and making sense of information. In fact, constructivist approaches to learning assume that subjectivity is critical because learners take in information and process it in unique ways that reflect their needs, dispositions, attitudes, beliefs, and feelings. That is, constructivism stresses creating meaning from experience (Jonassen, 1991). Furthermore, constructivism is not a theory about teaching only; it is a theory about knowledge and learning process that occurs daily in classrooms. It is a conception that includes knowledge, learning and thinking (Brooks & Brooks, 1993). Brooks and Brooks compiled a list of characteristics of a constructivist teacher as following:

Characteristics of a constructivist teacher are as the following:

1. Encourages student autonomy
2. Incorporates manipulative, interactive and physical materials for teaching.
3. Employs cognitive terminology such as classify, analyze and create
4. Focus on students' understanding; encourages engagement of dialogue; asks open-ended questions; and pursues elaboration of students' responses.
5. Provides time for students to construct relationships among the acquired knowledge and create metaphors; nurtures students through frequent use of the learning cycle method.

The essence of constructivism is that the learner must construct knowledge, but the teacher cannot supply it (Bringuire, 1980). For example, the constructivist approach requires the teacher to present a puzzling situation for the students to solve through

gathering data and testing their conclusions. Thus, the role of the instructor, as von Glaserfeld (1996) indicated, is not to dispense knowledge but to provide students with opportunities and incentives to build up their own. For example, Mayer (1996) depicts teachers as guides and learners as sense makers also. Gergen (1995) viewed teachers as coordinators, facilitators, resource advisors, tutors and coaches.

In addition, learning emphasizes the process and not the product, so the focus of instruction should be students' thorough understanding of a subject rather than the students' learning behaviors or skills. By the same token, the learner must actively construct new information and add them onto their existing framework for meaningful learning to occur. In other words, elaboration and relationships between old perceptions and new ideas must be personally drawn by the student in order for the new idea to become an integrated, useful part of their memory.

Constructivism emphasizes the interaction between learner and the environment as learning takes place. Manges and Wagle (1997) believe that through constructivist teaching, students can tap into their natural learning potential. That is because their experiences, their prior knowledge, and their personal interpretations are the essential components of all classroom activities.

Constructivism assumes that thinking takes place in contexts and individuals mostly construct that cognition as a function of their experiences in situations (Bruning, Schraw & Ronning, 1995). This theory states that learners form or construct much of what they learn and understand as a part of their experiences in a particular situation. And this is the ideal interaction of people and their environment in the acquisition and

refinement of skills and knowledge. A basic assumption of constructivism is that people are active learners and must accumulate knowledge for themselves (Geary, 1995).

Constructivism also emphasizes an integrated curriculum where students can study a topic in various ways. For instance, students can study Chinese literature through related literature, new vocabulary, hands-on experience, or through research of the related documents. From a constructivist's perspective, teachers no longer teach while standing in front of a classroom and deliver lectures. Instead, they use supporting materials (such as computer) to encourage learners to become actively involved through out-of-class interaction. On the contrary, activists stress on students' observation and collection of data, as well as generating and testing hypotheses, and working collaboratively with others.

According to constructivists, the traditional classroom is not necessary. A class can take place outdoors, in a studio, in a lab, or in a virtual classroom (which conducts the class through the use of a computer for both on-site and distance education). In fact, a teacher can integrate curricula in different settings to drive up students' interests in the subjects so that students can become self-motivated and encouraged to set their own goals, as well as monitoring and evaluating progress.

Constructivism in the undefined limits of virtual space frees pedagogy. Virtual space enables faculty to draw resources from anywhere in the world (i.e. via the Internet) and enables them to access and encourage an endless array of multicultural learning environments (Winn, 1991). All in all, constructivism is a philosophy that views the student as a thinker, creator, and constructor of knowledge. This is certainly a revolutionary change from the traditional view of a student as an owner of knowledge.

Introduction of Related Materials

The Narratives, Short Stories, Chinese Literature and Multimedia

Narratives are as elemental to us as language itself (Shimkin, 1993). This implies that our minds are structured for storytelling. In fact, “narratives and short stories are among the most powerful instruments for ordering everyday human experiences. Narratives can be expressed in oral or written languages, still or moving pictures, or through a combination of these media. For instances, narratives can be found in myths, legends, fables, tales, short stories, epics, history, tragedy, drama...etc.. In its almost infinite varieties of forms, narratives existed since time began. Indeed, narratives start with the very history of mankind” (Barthes, 1975). Narratives are an interpretative approach that describes humans’ daily activities in a form of symbolic action, which links the construction of reality with the formation of identity (Nicolopoulou, 1997).

“Narrative usually concerns real or pretend memories of something that happened and therefore are often largely in the past tense. However, there are also hypothetical, future tense narratives and others that take place in the present. Narratives often contain a chronological sequence of events, but one can also find narratives that contain only a single event or those that skip around in time. Narratives usually are referred to the written language, rather than the musical, pictorial and silently dramatic narratives” (McCabe, 1997).

Ancient Chinese narrative poems possess all the narrative qualities mentioned above. In fact, those poems would describe stories, record history, re-tell human experiences through alternating first and third person narratives. Sometimes, these poems were set to music and were sung to tell cultural progress. By the same token, “Mulan

Shih” possesses a folk-song format as well as folklore. Therefore, exploring the story within this poem is an important step in understanding “Mulan Shih”.

Human cultures have maintained their existence through different types of storytelling. Lock stated that lives are constituted as stories, by stories, and through stories (Lock, 1998). Humans appear to have an innate ability and predisposition to organize and represent their experiences in the form of stories. In fact, story telling is how human beings give meaning to their experience, because stories require less cognitive efforts and exposition due to the narrative form of presentation (Bruner, 1990). There are many disciplines that deal with narrative including cognitive psychology, history, linguistics, literary science, and theology (Quasthoff, 1997).

Short stories and poems are usually perceived as examples of historical and cultural contexts from the narrative substructures (i.e. storytelling, story reading). In fact, in order to learn about or understand a new culture and different types of literature in a different language, it is necessary for a person to be connected to the stories originated in that culture or folklores (Bruner, 1990). People are surrounded by stories in their everyday and professional lives. Stories have many functions. Following is a list of several of those functions:

1. Stories allow us to enter into others’ realms of meaning through the messages they present in their stories (Polkinghorne, 1988).
2. Stories help us find out our roles in a culture (Bruner, 1990; White, 1998).
3. Stories assist us in the recognition of similarities among human diversity (Bruner, 1990).
4. Stories help us retain memories (Bruner, 1990).
5. Stories allow us to explain (Bruner, 1990) and to interpret meaning of life (Gudmundsdottir, 1995).

6. Stories assist us in understanding human actions, intentionality and temporality (Bruner, 1990; Huberman, 1995).
7. Stories mediate is the process of articulating out identity so that we can explain to others who we are with a series of interconnected stories (Polkinghorne, 1988; Schafer, 1981).

Chinese poems have many similarities to narratives and stories, and narrative is an effective way of story telling in Chinese poems. Because the sharing of stories through our lives is so important, we must possess some kind of “narrative intelligence” that allows us to formulate or follow a story (Bruner, 1990; Randall, 1999; Polkinghorne, 1988).

For those people interested in Chinese literature or Chinese poems, the Internet is a convenient way to research needed materials. Although Chinese poems have been available on the Internet for some years, the application of multimedia was not fully explored in presenting them. In recent years, multimedia has gained attention in literature teaching because of its potential value in providing human-sense learning, and encouraging learners’ participation. In fact, incorporating technologies in literature teaching can entice students’ interests and enhance their learning experience. For example, an instructor can introduce a Chinese poem using materials prepared in multimedia so students can perceive the new subject through the audio-video experience.

Since computer technology has become a popular tool for today’s education, an instructor’s presentation can be seen around the world as a corresponding course. Learning through the Internet provides the flexibility and efficiency of computer instruction as well as individual attention of traditional education formats (Huang, 1997). Therefore, it becomes crucially important to facilitate multimedia technologies in teaching. And the selection of specific software and tools involved should be defined by

the projected learning results, desired performance, and various constructions of targeted subjects. Another reason that cutting edge technology may provide interesting learning is the interaction resulting from the interdisciplinary media presentation of the subject in a Chinese poem. This type of study can become a vital and enhancing part of learning through a computer. All in all, it is appropriate to pursue study interests through combinations of information in new ways in solving problems and in reaching new understanding of the old knowledge. That is, multimedia can help instructors to convey an idea successfully through audio-visual means. Therefore, learning Chinese poems may be a dynamic, personalized instruction through new combinations of multimedia technologies rather than the acquisition of a ritual and rigid teaching of facts. Moreover, teaching and learning can now become a new cycle of exploration and discovery. Multimedia products such as electronic storybooks are good examples. Electronic storybooks use traditional lecture or print stories as basic materials; then add or convert the graphics, animation, sound, and video to produce interactive storybooks for the use in instruction. In fact, electronic storybooks have become prevalent in literature education recently, for it is one way to teach students the literature elements, story plots, and even technology itself different than the traditional lecture (Chen, Ferdig & Wood, 2003). Electronic storybooks could be widely used by teachers and students in preparation of teaching materials, schedule planning of classes, design of versatile exercises of new subjects, and construction of explicit tutorial context. As one can see, learning or teaching a Chinese poem need not be boring, intimidating, or complex. There can be two-way interactions in the learning process, just as today's popular learning software (Mulan-

Animated Storybook, 1998) for youngsters that teach numbers, colors, alphabets, and shapes.

Multimedia technology such as “A knowledge-based multimedia system to support the teaching and learning of Chinese characters (Ki, 1994)” can move the learning process beyond one-way didactic instruction to an interactive mode in the teaching of Chinese poems. The decision to select a two-dimensional or three-dimensional visual support is crucial in the presentation of a particular poem. It’s also important to preserve the original materials to reach the goal of conveying a subject to students successfully during the switching of teaching methods. While the supporting multimedia teaching material may make it easier for students to understand a subject, this teaching method requires the instructor to put in more time and efforts in the preparation. This study will focus on the teaching of Chinese poems using the multimedia support rather than discussing different types of modern technologies.

Symbols (形象詞) and Expressions (對偶五言句) in Chinese Poems

Symbolism and expression are the crucial clues in identifying the moral behind any metaphor and figurative speech in a Chinese poem.

Before symbolism in literature can be applied to a particular work in any language, there must be a clear understanding of the basic concept about symbolism and symbolic interactionism (Blumer, 1969). A symbol is the representation of one thing using objects, while symbolic interaction is an interpretation of a symbol. Therefore, symbolism is the art of communicating a message using minimum words; that is, through the use of semiotics (word symbols). In the ancient time, symbols were used to represent things, especially in art and literature. The meaning of a certain symbol is passed down from

generation to generation. For example, any object with a dragon design represents the emperor himself and should be treated with fear and respect. Symbolism is a tool unlike any other. The spoken language we use everyday is explicit; however, symbolism is the hint for what metaphors really meant. In order to make metaphors universal in Chinese poems, symbolism must become standardized. Symbols are comparable to sentences, while symbolic elements are comparable to words (Thales, 1999). For example, the character of hieroglyphics in ancient Chinese is not a conventional language, but rather a pictorial language of symbolism. Demanded by the need for a completed record of things happened and done, sentences were formed by groups of characters.

Symbolic meaning lies in the feelings and memories that associated with the cultural or language background (Thales, 1999). The elements of symbolism in Chinese poems have a universal interpretation that almost become a second nature to Chinese. For example, we translate “canine” and “hound” into “dog” when in Chinese poems the moon can be represented by the following objects:

1. 嬋娟 (“chang-Jane”)— the moon.
2. 嫦娥 (“chang-erh”)— the goddess living on the moon.
3. 妲娥 (“dan-erh”)— another name for the goddess of the moon.
4. 蟾蜍 (“chan-chu”)— a silver toad.
5. 玉兔 (“yu-tu”)— a white rabbit made of jade.
6. 玉輪 (“yu-loon”)— a wheel made of white jade.

There are two terminologies that should be introduced. They are symbol (形象詞) and expressions (對偶五言句). Symbols and expressions are the crucial clues in identifying the moral behind any metaphor and figurative speech in a Chinese poem.

Symbols consist of widely used 2-word-groups in classical Chinese poems, and expression is usually a pair of 5-word-groups that provide access to the hidden morals using well known meanings of a particular object. Symbols and expressions are also used to project the author's original creation, and they both can appear in any possible order in a Chinese poem. The symbols could be flexibly varied and possibly non-sequential to other subject. However, the original metaphor will always be reminded and the moral will be traced back to generate the exact link to the specified topic. In this study, I will choose a particular Chinese poem—"Mulan Shih" (木蘭詩) as my model to demonstrate the interaction between the symbolism and the expression in the narrative poem.

Chinese Students' Learning Experiences in Literature

The Learning Pattern of Chinese Students Concerning Moral Poems

Traditional Chinese preferred abstract descriptions when writing ancient poems. In fact, the best and the most reverend classical model of ancient Chinese poems is characterized in "read between the lines" and "there's more than what meets the eyes." Therefore, in terms of poetry, a partial description can actually tell a whole story (just like the construction & meaning of certain Chinese characters). For instance, whenever one sees the numbers 3, 6, and/or 9 in a poem, in most cases the author meant to show quantity or a trend of increasing numbers. This practice of using the increments of 3's in ancient Chinese poems is common, as well as in the analogy of some Chinese characters. For example, there is a Chinese character "犇" which was made by writing the word "ox" 3 times. The definition of that character is stampede; meaning when 3 oxen run at the same time they are as fast as running for their lives. There is another Chinese character composed by writing the word "water" 3 times "淼", and its meaning can be flood, ocean,

or running water. Furthermore, the Chinese character that looks like rewriting the word “fire” 3 times “焱” really means a big flame or a glorious view. There is another common practice of using increments of 10’s in ancient Chinese poetry. When one sees the description of ten, one hundred, or one thousand; the meaning is beyond many. It is rather vast and numerous.

There are frequently quoted phrases using such descriptions. Among Chinese, we often hear people describe themselves as having a life of “a thousand hammers & a hundred furnaces,” and that’s just a figure of speech for depicting a seasoned life. Whenever we see “one thousand” and “one hundred” appearing together in Chinese poems, needless to say, the author is painting a picture of multitude (which is even countless). By the same token, “a thousand rounds and a hundred turns” scenario of a drama describes a complicated and complex story plot.

Way Wang is one of the reverend Chinese poets, and he is the one who perfected the art of “words in the picture, and picture in the words” in writing ancient Chinese poems. To illustrate this technique, here is a painting that completely expresses the following poem called SNOWY RIVER.



Figure 2-1. Chinese painting in poem 1

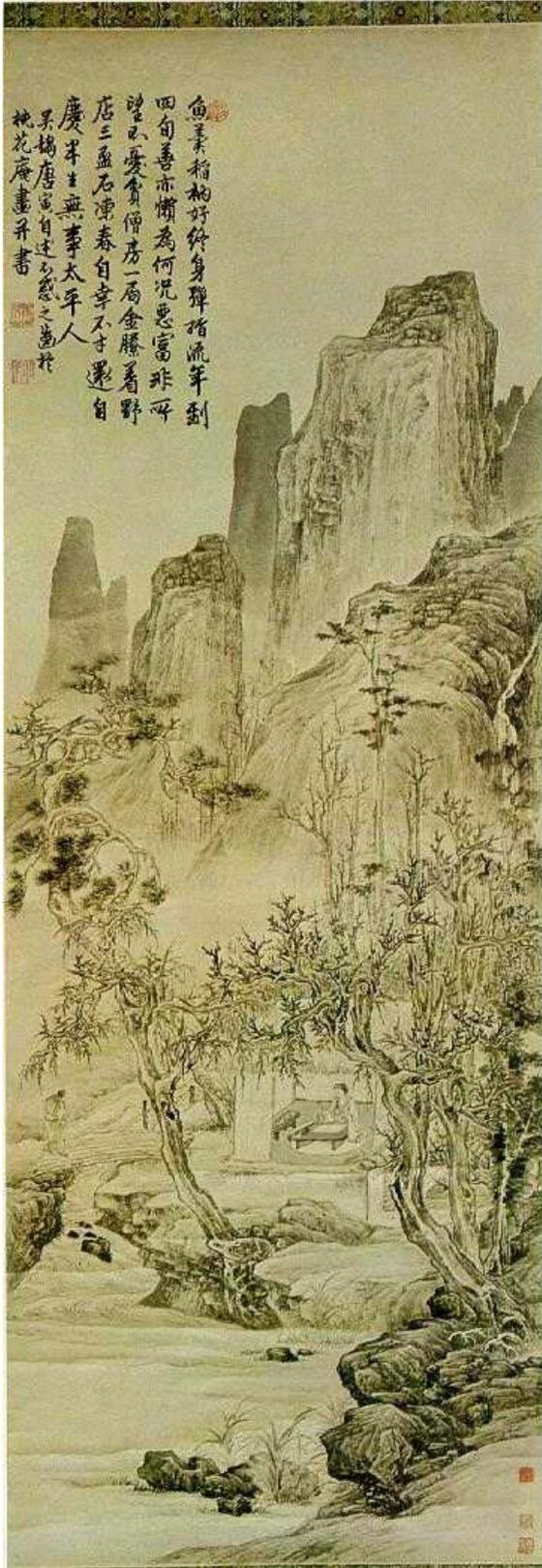


Figure 2-2. Chinese painting in poem 2

SNOWY RIVER

There's no trace of birds among a thousand mountains

Nor that of human on ten thousand trails

Only a boat carrying a man dressed in his straw-poncho and straw-hat

Fishing in a snowy river

Literature teachers would like to point these characteristics out to students, such as the contrast of “a thousand mountains” and “ten thousand trails” verses the loneliness and serenity of the fisherman. By human common sense, people expect to see or hear a noisy crowd or several creatures whenever a big number is used as a description. However, here people can get the feeling of great vacancy. By the way, this poem was originally written in Old Chinese (much like that of Shakespearean English), and was completed in 4 sets of 5 words in a rhyme. Such beauty of sweet & short (in another word, abstract & compact) combined with the art of “picture in the words, and words in the picture” is truly ingenious. The same theme ties in with the making of the triple-character words and the composition of the thousand-hundred phrases.

The SNOWY RIVER is an ancient poem that has been passed down from thousands of years; it has been so popular that it's taught in the 7th grade as a chapter in the textbook and not reserved for the college or the graduate students in Chinese literature classes. In fact, the beauty and the clever abstract structure of SNOWY RIVER is so well loved and well known to all Chinese educated in Taiwan that other poems in the same category are often included in the text books for elementary and middle school students. Therefore, it is common for youngsters in Taiwan to quote phrases from such poems in

their daily conversations. From this example, we see that traditional Chinese value the abstract & compact expression and this skill is practiced and taught at young age.

Difference between the Learning of a Moral Poem and a Narrative Poem among Chinese Students

This abstract (or proximity) practice can be illustrated as following. It's acceptable for a Chinese cookbook to indicate: Salt--- a little, Black Pepper--- a dash, Soy Sauce--- season to taste; instead of : Salt---2 tsp, Black Pepper---1 tsp, Soy Sauce--- 2 Tbsp. It's easy to see how "a little, a dash, & season to taste" associate with the custom practice of the abstract (or proximity). Even during the on-site demonstration, a chef would use terms "a little, a dash, and season to taste" as he/she prepares a dish. This kind of abstract & proximity expression is well accepted and practiced in everyday life and was never been objected or questioned among Chinese. However, this custom became a notable issue when an American student (studying abroad in Taiwan) tried to cook a Chinese dish by following a Chinese cookbook. He was looking for definite amount of condiments in tsp and Tbsp but all he saw was those abstract & proximity indication. The clear difference between Chinese and American cultures is perfectly illustrated in this case of abstract-verses-definite cooking lesson.

All in all, the abstract concept in Chinese poems is never an obstacle in learning among Chinese students. On the contrary, it's the subjective poems with defined objects that pose more resistance in learning. That's because the defined characters, objects, & backgrounds do not allow any room for imagination; and instead, the instructor has to provide precise descriptions of all that are involved and caused the unbearable boredom among the audience (one-way instruction is never fun)(Mayer, 2003).

In conclusion, incorporating the appropriate images of people & objects in a learning experience will certainly improve the efficiency in learning & entice the students' appetite in a new subject (Schnotz & Bannert, 2003). Thus, bring out the desirable outcome of a complete text material perception. As my favorite Chinese proverb says, "a picture is worth a thousand words!" (Mayer & Gallini, 1990).

Selected Examples

Two Types of Chinese Literature

Two distinct traditions exist in Chinese literature: the literary (士大夫文學) and the vernacular, or colloquial (民間文學). The literary literature is mainly for the scholars and noblemen in Chinese society. It involves the materials compiled by Confucius called the formal literature. One typical example is Shih (詩) or poetry. Shih is derived from the Shih Ching (詩經, Book of Poetry), one of the five Classics (五經) compiled by Confucius. Shih is an important subject to master for all scholars and noblemen, and knowing and memorizing Shih as well as composing Shih are some required skill for the elite group. In fact, Confucius stated: Shih makes you think, helps you observe, teaches you etiquette, expresses your emotions. In short with enough knowledge in Shih, one can act properly in his family, in the emperor's court, and even became well educated in nature sciences. (Confucius, 論語).

The colloquial literature can be traced back more than a thousand years before the Christian era, and it lasted until now. Started with poetry and later includes drama and fictions, the colloquial grew to include history and folklore. The vernacular is also an important sect in Chinese literature, because it had been popular and recognized by the

public as well as the members of the scholar-official class, the arbiters of literary committee. This committee is made up of members who were well respected for their achievements in literature, and they also set the standards for the orthodox literary tradition that began about 2000 years ago. In addition, in some rare cases an excellent colloquial literature can become a literary literature. (Liu, 1976)

Progress of Chinese Literature

The progress of Chinese literature may be illustrated in the following diagram.

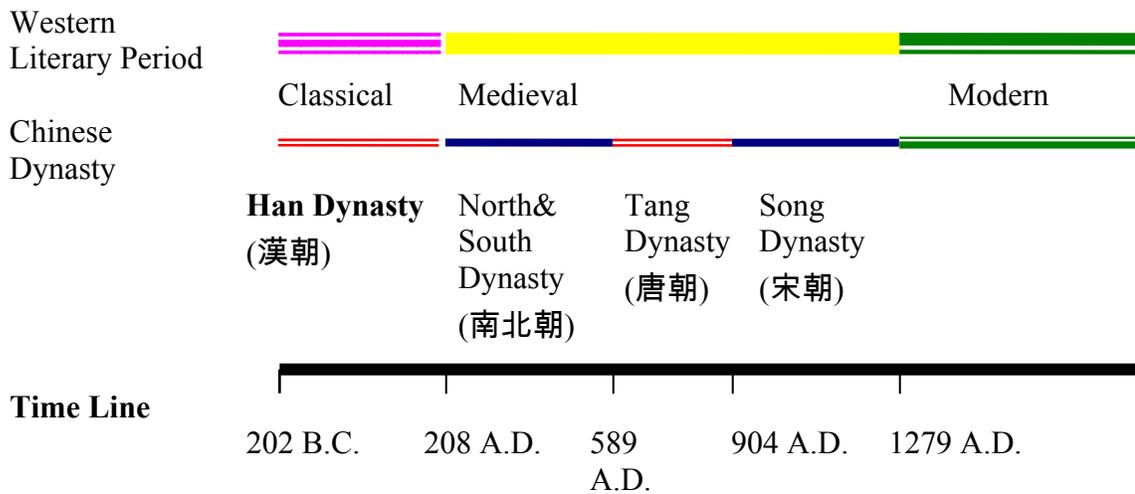


Figure 2-3. Chinese literature timeline

History of Chinese Literature

When one refers to classical Chinese Literature, it's inevitable to talk about its origin. Let's begin with the discovery of the earlier form of Chinese characters. The primary form of Chinese writing had been found in the inscriptions on bones and tortoise shells (甲骨文), dating probably from the 1400 B.C. to 1300 B.C.

From 1027 B.C. to 256 B.C., this period encompassed the work of four influential philosophers: Confucius (孔子), Mencius (孟子), Lao-tuz (老子), Chuang-tuz (莊子). The

compilation of the Confucius Classics became the orthodox teaching, which established a classical tradition that was to last until the present time.

One of the Confucian Classics –Shih Ching (詩經, Book of Poetry) is one of the most important poetic works ever produced. It is made up of dynastic songs, court poems, and peasant poems. A new style in prose poem started around 200 B.C., which was irregular in form and initiated a new literary genre called the Chu-Tz'u (楚辭). These poems were set to music and were collected in Yueh-Fu (樂府詩集, the Music Bureau).

The Fundamental Concept for Chinese Phrases, Symbols and Expression

Chinese phrases in widely are consisted of individual words with specific meaning, most of the time their meanings adhere to the meaning of a single word, but sometimes they have specific meaning to particular literary setting. In general, phrases in Chinese literature are made in group of two to seven words, which form the main meaning of a sentence or a paragraph, though we see most of them in four-word phrases. However, it is easy to find that five-word or seven-word phrases are more popular in poems. A phrase contains meanings beyond the expressed words. In many examples, a phrase corresponds diversely both in meaning and pronunciation. For example, the idea of walking, corresponding to the word “行”, is well defined and is a common sense in everyday life with the pronunciation of “hsing/.” However, the word “行” in the phrase “行為” carries the general or abstract notion of a person’s “action.” In another use, when the word “行” in the phrase “品行” carries the notion of a person’s character “behavior,” with the sound of “hsing\.” Furthermore, the phrase “行伍” carries the meaning of military services in

Chinese literature and the phrase “行行出狀元” carries the meaning of that everyone can be successful by their intelligence and diligence regardless of their specialty. Another phrase “一行白鷺上青天” means that there are birds in one row flying into the sky where the word“行” in the meaning of“row” with the pronunciation of“hang/.” Probably the learners could learn the various meanings of a word from its constructed phrases in the way of exploring the illustrations of a number of commonly used phrases. A word in various phrases may contain different meanings and pronunciations, and we can collect every meaning related to this word. Although we can traditionally catch up the different meanings of a word or a phrase through written explanation in the textbook; however, we would like to entice the students’ interest and curiosity for learning literature. The study of literature today in every level is primarily a study of exposition and explanation. The emphasis falls on making sensible meanings through textual analyses. The learning mode itself, prompts students to judge a literature work from an expository point of view. Moreover, the thoroughness to which our emphasis on explanation and argument might work against students’ efforts to make meaning out of narratives or lyrics.

“Mulan Shih” in Chinese and English Version (Li, 1995; Jiang, Chiang & Jian, 1997; Disney, 1999)

“Mulan Shih”

Tick tick and tick tick,
Mulan weaves by the door.
You don't hear the shuttle of a loom,
only a lady's sighs.
One may ask, "Who's on her heart?"
One may ask, "What occupies her mind?"
(Mulan answered) "No one is on my heart.
& Nothing occupies my mind.
Only last night I saw the draft,
The Khan is calling all troops,
The army list fills twelve scrolls,
& My father's name is on the recruitment of every
battle.
(Besides) My father has no grown-up sons,
& I, Mulan, have no older brothers.
So, I want to buy a horse and a saddle,
To serve in the army in my father's place."

Go to the East, she buys a good horse,
Go to the West, she buys a saddle,
Go to the South, she buys a bridle,
& Go to the North, she buys a whip.
At dawn, Mulan departs from her parents,
In the evening, she camps by the Yellow River.
(in the wilderness)Mulan can't hear her parents calling
her name.
Only the Yellow River flowing by.
She left the Yellow River the next morning,
By sunset, she arrives at Black Mountain.

木蘭辭

唧唧復唧唧，
木蘭當戶織。
不聞機杼聲，
唯聞女嘆息。
問女何所思？
問女何所憶？
女亦無所思，
女亦無所憶。
昨夜見軍帖，
可汗大點兵，
軍書十二卷，
卷卷有爺名。
阿爺無大兒，
木蘭無長兄，
願為市鞍馬，
從此替爺征。
東市買駿馬，
西市買鞍韉，
南市買轡頭，
北市買長鞭。
朝辭爺娘去，
暮宿黃河邊。
不聞爺娘喚女聲
但聞黃河流水
鳴濺濺。
旦辭黃河去，
暮至黑山頭。

(in the wilderness)Mulan can't hear her parents calling
her name.

Only the horses' neighs of the nomad's army from
Mount Yen.

不聞爺娘喚女聲
但聞燕山胡騎
聲啾啾。

Mulan goes ten thousand miles on top secret mission,
& She crosses massive mountains like flying.
Gusts of cold air from the north carry the sound of
time-telling gong.
The reflection of armors in the snow sends out chills,
Casualties are high even among *Generals*,
Brave warriors return ten years later.

萬里赴戎機，
關山度若飛。
朔氣傳金柝，
寒光照鐵衣。
將軍百戰死，
壯士十年歸。

When Mulan returns from the war, the Emperor
summoned her.

The Emperor sits in his court.

To meet with his officials,
& award hundreds and thousands in treasure.

The Khan asks Mulan what she desires.

(She replied)"Mulan has no need for an official title.

But, only wish for a swift & healthy camel,
To take me home."

歸來見天子，
天子坐明堂。
策勳十二轉，
賞賜百千強。
可汗問所欲，
“木蘭不用尚書郎，
愿借明駝千里足，
送兒還故鄉。”

Mulan's parents heard about her homecoming,
They hurried out to the city gate to meet her in their
old & frail frame.

Mulan has an older sister,

Immediately she dressed up to meet her.

Mulan has a younger brother,

He whets the knife, shrill, shrill, to prepare a dinner.

(Mulan said) "I open my bedroom door,

& I sit on my old bed,

Then, I take off my armor;

爺娘聞女來，
出郭相扶將。
阿姊聞妹來，
當戶理紅妝。
小弟聞姊來，
磨刀霍霍向豬羊。
開我東閣門，
坐我西閣床。
脫我戰時袍，

into the recruitment of Khan (可汗, the emperor) in her father's place and fought the invaders courageously. She defended her country with superior skills in martial arts, and returned home triumphantly. Her comrades did not know her as a woman for all the years they spent together on the battlefield and were totally shocked when she finally appeared in a lady's outfit. (unlike the Disney's version of Mulan's story).

With the determination of fulfilling her father's military duty, Mulan proved to be a formidable warrior and helped to win the war—and impossible task for a woman in an old and conservative era. She overcame the society's constraints and the hardships in a practical way. After her triumphant return, her true identity was revealed, and she resumed her original identity and duty of a graceful lady.

The legend of Mulan has been popular for generations in China (樂府詩集).

Although there is no clue as to whether Mulan is surnamed Fa, or Chu, or Mu itself, after all, the assumption is that no body knows her real name (古今樂錄, 樂府詩粹). However most drama based on the poem ascribed Fa as her surname. Even though Mulan is a fictitious character, her story has inspired many Chinese girls to achieve goals and realize dreams. Moreover, Mulan is addressed and interpreted in many books in different language in modern time (Kingston, 1976; Chin & Arai, 1993; Lee, 1995; Jiang, 1997; Zhang, 1998; Souci & Tseng, 1998). And the products related to this topic have also been created in multimedia such as the Disney movie “Mulan” and the animated storybook “Mulan.”

The value of this poem (“Mulan Shih”) lies on the organized arrangement and description by the author (謝榛Hsieh, 15th century). Due to the popularity of the heroine

image of Mulan, “Mulan Shih” (a folk song) becomes a narrative poem in Chinese literature (樂府詩集). The poem displayed the nature and simplicity of a folk song and a complex, and, yet harmonious, structure of a story (謝榛 Hsieh, 15th century). Mulan lived in the era of the most delicate and complicated period of China that different tribes have severe conflicts and so, “Mulan Shih” was created under such upheaval age. The history background helped establish the heroine model of Mulan, and the author reflected the reality through every single detail in this poem to paint the pictures of this story (莫廣詮 Mo, 1986). The poet Wei Yuan-Fu (韋元甫 Wei, 8th century) of Tang Dynasty praised Mulan’s sentiment in his poem about her honoring her family and her father and her loyalty to her king. In addition, her love for her aged father, her brave heart as a warrior, and her disinterest in fame and wealth have shaped the respectable sentiment in this poem. Finally, the highlight of this poem lies in Mulan’s pure love for her parents (郭茂倩 Kuo, 10th century). By: Anonymous (5th or 6th century A.D.)

Language Arts of “Mulan Shih”

Mulan was born in a time plagued by wars and battles between different nations and tribes, and “Mulan Shih” was composed in this period. (Originally a popular folk song was later polished by scholars to be a narrative poem.) Through this narrative poem, the anonymous author created a heroine. This poem vividly described her culture background as well as the scenarios of the story. Moreover, the poem was composed with a rhyme in every line using a folk song pattern. The language arts used in “Mulan Shih” can be discussed in 6 sections according to the 6 paragraphs in this poem (蔣治中 Chiang, 1999).

Paragraph one basically sets the stage for why Mulan responded to the draft in her father's place. In ancient time, women were not allowed to join in the armed forces; therefore, this poem started with 4 lines describing a typical scenario of a lady weaving cloth. And in Mulan's case, her mind was preoccupied and one only hears her sighs and not the noise of the loom. The English translation is as follows:

Tick tick and tick tick,
Mulan weaves by the door.
You don't hear the shuttle of a loom,
only a lady's sighs.

Moreover, there's a folk song (折楊柳歌) in Liang Dynasty (梁朝 534 A.D.-556 A.D.) that has a similar rhyme structure and story description to these opening 4 lines in "Mulan Shih". It goes:

Shoo Shoo and tick tick,
Lady weaves by the window.
You don't hear the shuttle's sound,
Only the lady's sighs. (Liu, 1976)

It's interesting to see a question and answer format in a poem, and "Mulan Shih" employs this technique to tell the reason for Mulan to join the army.

One may ask, "Who's on her heart?"
One may ask, "What occupies her mind?"

And Mulan answered,

My father has no grown-up sons,
& I, Mulan, have no older brothers.

Mulan's love for her father and her country and her courage to enlist in her father's place showed through the quote above. She described her father in his old age and has an underaged son and neither is qualified to fight in any battle. This awkward situation left Mulan to decide what could be done by her or her older sister. In the North Dynasty,

Mulan and other women can be taught to ride horses and handle weapon, but to answer the draft in a father's place is never heard of. Furthermore, to disguise as a man to fight in an army is an outrageous idea in Mulan's era. However, this idea was realized by Mulan's determination when she mentioned:

*So, I want to buy a horse and a saddle,
To serve in the army in my father's place.*

We also see this determination actually sustained her through 12 years of harsh military life during wartime.

The second paragraph of "Mulan Shih" described how Mulan's plan to join the army was accomplished:

*Go to the East, she buys a good horse,
Go to the West, she buys a saddle,
Go to the South, she buys a bridle,
& Go to the North, she buys a whip.*

The author used of a set of 4 opening lines, like those in the first paragraph, appeared here to describe Mulan's preparation. She might not have acquired those items from different stores located in 4 different directions. This is just a common practice in folk songs to use a recursive format to emphasize a particular action. In this case, the focus is on the hectic preparation before Mulan's departure before she enlists in the army.

This repetition format is needed to put the emphasis on the scenario of Mulan's preparation; it is also needed for the rhyme structure of the lyrics. This task is done skillfully and carefully here to avoid boredom and stress (陳友冰 Chen, 2000). This portion of the poem also depicts the pro-active attitude of Mulan's personality and her determination (a heroine quality) through the description of her preparation. In addition, one can also sense the urgency of the draft. (侯潔之 Ho, 1988; 洪申我 Hung, 2000).

The following quote is the second half of the second paragraph:

At dawn, Mulan departs from her parents,
 In the evening, she camps by the Yellow River.
 (in the wilderness) Mulan can't hear her parents calling her name.
 Only the Yellow River flowing by.
 She left the Yellow River the next morning,
 By sunset, she arrives at Black Mountain.
 (in the wilderness) Mulan can't hear her parents calling her name.
 Only the horses' neighs of the nomad's army from Mount Yen.

This part is made of 2 sets of 4 lines in the form of comparison. It describes Mulan's physical and emotional journey. We see how Mulan was struggling between her homesickness and her sense of responsibility through the contrasting terms of "dawn" & "evening", "morning" & "sunset", "can't hear" & "only (hear)", and "Yellow River" & "Black Mountain." These are a few sets of comparisons used here to narrate the story vividly displaying Mulan's transition.

At dawn, Mulan departs from her parents,
 She left the Yellow River the next morning,

We see Mulan forfeits her comfort zones in both small and big scale. First time, she left home; second time she left the boundary of her country. And, an interesting point here is she departs twice in the early part of the day: first time, dawn, and second time, morning. We also see contrast terms juxtaposed in story telling:

(*1) *At dawn*, Mulan departs from her parents,
In the evening, she camps by the Yellow River.
 (*2) She **left** the Yellow River the next *morning*,
 By **sunset**, she **arrives** at Black Mountain.

From (*1), we see the contrast of "dawn" & "evening". And in (*2), we not only see the repetition of the same concept ("morning" & "sunset"), we also see the color contrast of "Yellow" & "Black". There are also the opposites of "left" & "arrives", and

“River” & “Mountain”. These comparisons mentioned above bring out the changes in time, distance, location, and geography. Moreover Mulan’s determination is emphasized as she travels through rivers and mountains.

The third paragraph in “Mulan Shih”, which starts with:

*Mulan goes ten thousand miles on top secret mission,
and ends with:*

Brave warriors return ten years later.

basically describes the triumphant return on Mulan. The language arts incorporated here is the most skillful, because the essence of this story was told in 6 short sentences: Mulan’s contribution and accomplishment in the war, and brilliantly sums up her 10 years of soldier’s life.

The opening sentence quoted above,

*Mulan goes ten thousand miles on top-secret mission,
& She crosses massive mountains like flying.*

described Mulan’s continuous victory.

The following sentence:

*Gusts of cold air from the north carry the sound of time-telling gong.
The reflection of armors in the snow sends out chills,*

depicts the battles taking place in the cold, snowy front. And Mulan’s 10 years of military life is sensed in the next sentences.

*Casualties are high even among Generals,
Brave warriors return ten years later.*

One thing to point out in Chinese literature is: the numbers used in a poem may not necessarily be the “exact” number targeted. There are many examples that use “12

scrolls”, “12 turns”, “12 years” only emphasize on the large number. Moreover, the number “10”, “100”, “1000”, “3”, “6”, “9”, and “12” are some of the abjections frequently used in Chinese poems. A good example is:

桃花潭水深千尺 Peach Blossom Lake may be a thousand feet deep,
不及汪倫送我情 but not as deep as my friend's love for me
(by 李白Li Bai, from “李太白全集”)

In this poem, the Peach Blossom Lake may not be 1000 feet deep, it’s only said so to fathom the depth of their friendship.

The forth section of “Mulan Shih” starts with “When Mulan returns from the war, the Emperor summoned her.” And ends with “...to take me home.” This section describe how the Emperor awarded Mulan but the offer was declined since Mulan prefers to return to her hometown soon. From “(the Emperor) To meet with his officials, to promote brave warriors & award hundreds and thousands in treasure.” We see an exaggerated description which stresses Mulan’s bravery and collective contributions during her service in the military. And “Mulan has no need for an official title.” clearly communicates Mulan’s desire and motivation is not in the reward but is a pure patriotism and love for her father. Finally, “But, only wish for a swift & healthy camel, to take me home.” depicts the strong emotion Mulan feels after the war ends.

The opening and the closing sentences of the fifth section are marked by

Mulan's parents heard about her homecoming,
and
& None knew Mulan is a girl.

This part paints a joyful picture of a family reunion and so if I may describe this happy and warm scenario with a melody it'll have an "allegro" tempo. This is a sharp contrast compared to previous scenarios, such as:

only a lady's sighs.

(in the wilderness) Mulan can't hear her parents calling her name.

and

To take me home.

Also, we can see the above quotes as the progress of a story from departure to reunion. Furthermore, we see the author reminds readers of the femininity of Mulan in

I fix my hair by the window, & I put on my make-up by the mirror.

This is also a contrast from earlier description of her determination to take her father's place in the army, when we read

So, I want to buy a horse and a saddle.

It's interesting to see how the author starts out this poem painting Mulan as a typical maiden.

Mulan weaves by the door.

And the author restates Mulan's femininity to end this poem. Last, but not least, this section is ended by a comic relief which stresses Mulan's wit in hiding her true identity as a girl for 12 years while provides a happy ending.

*They were all shocked and perplexed.
Traveling together for twelve years,
& None knew Mulan is a girl."*

Section six, the shortest section of "Mulan Shih", is Mulan's soliloquy. This is a clever way to emphasize Mulan's shrewdness. Moreover, the metaphor of a he-hare's feet being clumsy by nature and a she-hare's blurry vision as a hereditary trait is ingenious.

*"The he-hare's feet are clumsy,
The she-hare's eyes are blurry.
& When these two hares run side by side,
Who can tell it's a He or a She?"*

List of Symbols and Their Definitions in “Mulan Shih” (木蘭詩)

Chinese	Pronunciation	Definition
唧唧	Tsiek-tsiek	Noise of a loom
機杼	Ch-chu	Shuttle of a loom
軍帖	Chung-te	Draft or conscription notice
可汗	Khan	The Emperor
戎機	Rong-chi	Top secret mission
關山	Kuang-shang	Massive mountains
朔氣	Su-chee	Gusts of cold air, typical of the North
金柝	Ching-toal	A time-telling gong, (gong—a musical instrument)
鐵衣	The-yee	Armor
壯士	Jong-she	Brave warrior
天子	Tien-tze	The Emperor
明堂	Ming-tong	The emperor’s Court where the emperor meets with his officials
明駝	Ming-toh	A swift and healthy camel
霍霍	Huo-huo	Noise of sharpening a knife—shrill, shrill
花黃	Hua-huang	A kind of cosmetic for women, often worn on the forehead
爺孃	Yeh-niang	Father and mother, or parents
胡騎	Hoo-Jee	Hun people’s army
紅妝	Hung-tzang	Cosmetics used by women
雄兔腳撲朔,	Hsiung-tu- chiao-pu-shuo,	The he-hare’s feet are clumsy
雌兔眼迷離	Tzu-tu-yen-mi- li	The she-hare’s eyes are blurry

Design of the Educational Software Created for this Study—Mulan Tech-Rich Lesson

This is a tech-rich learning model designed to test the efficiency of multimedia support in Chinese literature classes. There are six categories in this demonstration model based on the constructivist’s principle of instruction that stimulate the five human senses (i.e. vision, hearing, touching, tasting, and smelling.).

The design of this model integrated a selected Chinese narrative poem (“Mulan Shih”) into a multimedia-technology-support-presentation. The mission of this audio-visual material is to entice students’ interest in learning an unfamiliar subject through the stimulation of vision, hearing, and touch (i.e. images, sounds, and typing/ mouse-clicking movements).

The first category is the introduction of the lesson, which includes background knowledge of “Mulan Shih” in terms of historical and literature reviews. This section covers the hypertext, the resource page, the hyperlink, and the audio description.

The second category is the lesson plan itself, which describes the rationale, the content, and the object of “Mulan Shih”.

The third category is the text of “Mulan Shih” in English; this section uses color coding to illustrate the different plots of this poem. Moreover, there is a recording of a teacher’s rhythmic reading of “Mulan Shih” playing simultaneously with the English text to help the students learn the poem (the phonetic way). A vocabulary listing is also included, which explains the phrases, the expressions, and their definitions in both hypertext and audio presentations.

The fourth category explains the symbols in “Mulan Shih” through several audio-visual products including the original Chinese text of “Mulan Shih” displayed in a scroll animation. This animation is user-friendly and it simply allows the learner to move his/her computer-mouse to browse the text back and forth.

The fifth section consists of follow-up questions, which contains several short essay questions to test the students’ comprehension after they finish the tech-rich lesson. The students are asked to answer the questions based on the knowledge they learned from

the tech-rich lesson and to return their answers to the teacher through the internet instead of the traditional paper-and-pencil-response in the classroom.

Finally, the sixth section records the communications between the teacher and his/her students.

CHAPTER 3 METHODOLOGY

This chapter is devoted to the description of the design and methodology used to investigate the effects of varied sequences of two delivery methods (expository and multimedia), in presenting a Chinese literature lecture. The investigation will use a Split-plot ANOVA analysis to answer questions about the benefits of the sequence applied.

The purpose of this study is to improve students' literature learning at the high school level and to provide teachers with a low-cost, ubiquitous, hands-on technology and an instructional design through an audio-visual classroom.

Description of Setting

Two teaching sequences with the same subject will be taught using multimedia material and traditional text material. The Treatment group will have the teaching sequence in the reverse order from the Control group. Each group will take a post-test after each specific teaching method. The assumption is that higher scores will result from the group which uses the multimedia teaching method first, because it entices students' appetite for an unfamiliar subject.

Table 3-1. Test Design

	Pre-test	Order of teaching methods	Post-test
Treatment group	Yes	Multimedia—Expository (Text material)	Yes
Control group	Yes	Expository (Text material)—Multimedia	Yes

The setting for the study is in a public high school language art class in the state of Florida (P. K. Yonge developmental research school in Gainesville, Florida). This school

has an “A” grade in the Florida School Indicators Report. The average class size for grades K to 3rd is 21.81; 4th to 8th is 27.49; and 9th to 12th is 23.69, and the average class size for language art classes is 24. Moreover, the English teachers’ average years of experience are 3-4 years.

Description of Participants

Participants were selected for the study from a sample chosen by the investigator as a representative sample of public school students and teachers in Florida. The chosen school is a developmental research school, and it is an experimental school associated with the College of Education at University of Florida located in Gainesville, Florida. This school was chosen for two reasons: first, the students who attend this developmental research school are demographically representatives of the population in North Central Florida. In fact, this school ensures a fair distribution of students based on gender, race, socioeconomic status, and academic ability. Second, a majority of this developmental research school students started and commenced their education there, and there were rarely any disruptive school transitions from elementary to middle school and from middle school to high school that could contribute to error.

The percentage of white students is 60.12 %; Black, 23.99 %; Hispanic, 10.12 %; Asian, 1.65 %; Native American Indian, .52 %; and Multiracial, 3.57 %. And the pupil: teacher ratio is 24:1 from grades K to 12th.

Two high school language arts classes were randomly chosen to participate in this study, and the classes were also randomly assigned to the two experimental groups. The age of the 11th graders in the participating language arts classes ranges from 17 to 18 years and the average size of the language art class is 24.

The participants were taught a Chinese literature poem-“Mulan Shih” by the English teacher who conducted this experiment in his two language arts classes. There will be 50 of the 11th grade students participating in this study. There is no monetary compensation for participating in this research study.

Experimental Research Design

This research was designed as a pretest-posttest-treatment-study (Isaac & Michael, 1981), and it used a Split-plot ANOVA to provide the quantitative data that could be used to answer questions about the efficiency of the sequence of the multimedia and expository methods used. Specifically, this study performed a pre-test before the class, and conducted two post-tests at the end of each applied method regardless of the sequence used. A pre-test of the selected topic was given to students before the lesson to test the knowledge level of the students. Posttest 1 shall tell which method is better after the lecture is given on a Chinese narrative poem. The posttest 2 shall indicate which sequence of these two methods work better for the students.

This experiment was designed to help to answer questions about the method effect of a treatment and the effects of a treatment that varies only in the sequence of presentation. The study was called Split-plot ANOVA with sequence and tests as repeated measures to test the two experimental groups. This measurement was selected because the policy of the state law indicates that the investigator cannot split a class to test the students, therefore, individual random assignment within groups is not possible, and the random assignment in this study is only at the class level, so Quasi-experimental design was used to conduct this measurement. The main effect of this design is to compare the mean scores on the dependent variables which were collected from three occasions (pretest, posttest 1, and posttest 2). This way, we expect the results to come

from a more powerful test with a treatment effect. Moreover, if the correlation between the pretests and posttests of the two experimental groups is significant, then we can conclude that this particular sequence results in ANOVA power advantages. Finally, the description of our study is specified in the following sections.

Section Intervention Pattern

Two intact high school language arts classes were randomly assigned to the two experimental groups, and such assignment was done so the students of each class stay in the same experimental group. The policy of the state law also requires that a responsible teacher must monitor his/her students during class time. Table 2 provides the quasi-experimental design for this study. Treatment group students were given Treatment 1 (the multimedia material preceded the lecture) while the control group receives Treatment 2 (the lecture preceded the multimedia material). The students for both of the experimental groups were given a pretest prior to the initial treatments. The treatment group will have the teaching sequence in reverse order from control group. Each group will take a post-test after each specific teaching method. The general design of the study followed the following format.

Table 3-2. Quasi-experimental Design for Each Group

Treatment 1 Group	O ₁	X ₁	O ₂	X ₂	O ₃
Treatment 2 Group	O ₁	X ₂	O ₂	X ₁	O ₃

Pilot Study

A pilot study was conducted to identify the validity and the reliability of the test items for the 11th grade students. The subject and questionnaires used in the pilot study of this research were selected by the investigator from related study materials suitable for middle school students in Taiwan. In fact, “Mulan Shih” is one of the subjects in the

Chinese literature text book at middle school level in Taiwan. The selected questionnaires were compiled through different research channels and then translated into English after being validated by a junior high school Chinese literature instructor who has more than ten years of experience. The questionnaires were also approved by a high school language arts teacher before the research was conducted. They include true-and-false and fill-in-blank questions. These two kinds of questions allow participants to respond quickly to the selected topic, a Chinese narrative poem—"Mulan Shih".

Participants

Ten 11th grade students (6 males and 4 females) (a developmental research school associated with the College of Education at University of Florida) were selected to participate in this pilot study.

Procedure

The pilot study test items (See Appendix A) were administered to the ten 11th grade students who had returned their parental consent forms. The students were asked to recall the knowledge of the Chinese narrative poem—"Mulan Shih" through 20 true-and false questions and 20 fill-in-the-blank questions. The students were told that the research was really concerned with the efficiency of the teaching method.

Data Analysis

Holsti (1969) described content analysis as a technique for making inferences by objectively and systematically identifying specified characteristics of messages. In accordance with the guidelines for this type of analysis, students' responses were checked independently by two reviewers including the research investigator and a second independent reviewer. The internal consistency is calculated and used in the analysis. Two types of test items, True-and-false and Fill-in-the-blank, were also analyzed

respectively. Based on the results of the respective analysis of each part, inappropriate items were dropped accordingly to increase the reliability to the required standard (Cronbach's α is no less than 0.7). And then the remaining items were put together to be analyzed again. At last, the test items were finalized into a reasonable number with the highest reliability value generated from the statistical measurement (Cronbach's Alpha).

True-and-false question. The 20 true-and-false items in this analysis were labeled as Q1-Q20 in part 1 of the test. As a result, the analysis of the value of the Cronbach's α (reliability) of the part 1 increased (specified in the table below), when certain questions were dropped.

Some of the original test items were found to have overly long descriptions that might impact students' abilities to understand the questions. Some of the questions used advanced vocabulary in description which might be beyond the students' knowledge base in understanding those questions. These items were dropped based on the statistic analysis of the items' reliability and the expert's review in order to get the adequate validity of the test items.

Basically the value for the Cronbach's α should be no less than 0.7 to ensure the reliability of these test items.

Fill-in-the-blank question. The 20 fill-in-the-blank questions in this analysis were labeled as P1-P20 in part 2 of the test. As a result, the value of the Cronbach's α (reliability) of part 2 increased (specified in the table below) when certain question were dropped. Basically the value for the Cronbach's α should be no less than 0.7 to ensure the reliability of these test items.

Table 3-3. Reliability Value of True and False Question

Dropped variables	Cronbach's α	Number of items
None (All items *)	-.470	20
Q1, Q6, Q12	.349	17
Q16, 18	.600	15
Q10	.634	14
Q20	.660	13
Q5	.675	12
Q14	.693	11
Q15	.725	10

* "All items" mean the original amount of questions before screening out any one.

Table 3-4. Reliability Value of Fill-in-the-blank Question

Dropped variables	Cronbach's α	Number of items
P8, P9, P11, P17*	.703	16
P8	.703	16
P9	.703	16
P11	.703	16
P17	.703	16
P2	.732	15
P7	.760	14
P14	.794	13
P16	.806	12

* In the analysis of Cronbach's α , P8, P9, P11, P17 were automatically removed by a specific computer program because the statistics analysis showed that they have low variance and their determinant of the covariance matrix is approximately zero.

Combination of the two parts of test items. Twenty-two items were selected from the original 40 items including the true-and-false and fill-in-the-blank questions, according to the reliability of the statistic analyses shown above. There are 10 true-and-false questions and 12 fill-in-the-blank questions. As a result, the value of the Cronbach's α of the combination items increased (specified in the table below) when some inappropriate items which badly relate to the others were dropped. Basically the adequate value for the Cronbach's α should be no less than 0.7 to ensure the reliability of these test items.

Table 3-5. Reliability Value of the 22 Items of True-and-false and Fill-in-the-blank Mixed.

Dropped variables	Cronbach's α	Number of items
None (All items*)	.673	22
Q7	.714	21
P13	.719	20

* "All items" mean the original amount of question before screening out any.

The Cronbach's α increased to an acceptable value .714 when item Q7 was dropped. Moreover, when item P13 was dropped along with item Q7, the value of Cronbach's α increased to .719. Although there is no big difference in the value of Cronbach's α between dropping Q7 only and dropping both Q7 and P13; however, the decision was made based on general preference of having an even number questionnaire. Therefore, the final decision is that the test items were to have 20 items total with 9 of the true-and-false questions and 11 fill-in-the-blank questions. The reliability of the test items was adequate according to the value of Cronbach's α at .719. The selected 20 items were finally reviewed by a Chinese literature teacher and the investigator to evaluate their

content validity as well as the level of difficulty of the items. The reviewers rated the tests as valid as well as having the appropriate difficulty.

Instruments

The pretest and the two posttests used in this study were done as paper-and-pencil-tests developed by the researcher. The same instrument is used for the pretest and the posttests to ensure the equivalence for each group. Each test instrument consisted of the same paper and pencil test items about the concept of the Chinese narrative poem—"Mulan Shih". Tests were given to examine the high school students' knowledge about the concept of a story plot based on a Chinese narrative poem. Specifically, the test measures the efficiency of multimedia material in the varied sequence. Furthermore, the teacher and the students in high school level language arts classes used multimedia material and expository teaching methods to study the assigned literature topic.

Illustrations were used in the historical-content questions to present a complete history-and-literature concept. Participants were asked to answer each question based on their knowledge, and the test questions were reviewed by two Chinese literature teachers and one English teacher who teach middle-school in Taiwan.

Description of the Test Items

The original 40 test items were selected and reviewed by two Chinese literature teachers and one English teacher who have, individually, more than 10-years of teaching experience in Taiwan. After the pilot study, one Chinese literature teacher and investigator reviewed the selected items according to the statistical analysis of item reliability in order to ensure the item validity. There are two sections in the paper-and-pencil-test, and the test items were true-and-false and fill-in-blank questions, which requires students to respond based on a conceptual understanding and instant reaction. To

answer the questions, students need to recall and apply their knowledge based on general understanding of the concept.

Advantages and limitations of the selected test formats. True-and-false and fill-in-the-blank questions, like every assessment technique, have their advantages and limitations. The advantages are as following:

- A broader content can be sampled because it takes little time to answer and thus increase the validity.
- Scores won't be influenced by the scorer's impression of students' writing ability.
- The results can yield reliable scores since there is no difference in the scoring system.
- True-and-false and fill-in-the-blank questions are timesaving in grading.

On the other hand, the limitations of true-and-false and fill-in-the-blank questions are as follows:

- True-and-false and fill-in-the-blank questions cannot test complex learning concepts which could only be measurable by an essay question.
- The true-and-false questions sometimes confuse the students.
- The true-and-false questions could be answered correctly by guessing.
- The questions cannot be constructed relatively quickly.

The questions in this study were derived from similar tests found in the standard middle school instructors' handbook in Taiwan. In addition, true-and-false questions are used to test the students' concept of the story plot in "Mulan Shih" while the fill-in-the-blank questions are used to test the students' vocabulary which they learned from "Mulan Shih".

The-Story-of-Mulan-Shih-test was given as a pretest prior to the lecture to all participants. The researcher took adequate steps to insure the integrity of the test administration. Directions were read aloud by the classroom teacher to ask the

participants to complete the pretest on their own without getting help from outside resources. Participants were advised orally that the evaluation is part of a research program, and it is not an individual assessment for any other study. The students were given 10 minutes to complete the pretest, as well as the two posttests followed each appropriate treatment (i.e. either the multimedia or the lecture). The test items are provided in Appendix (A).

Variables

The following dependent variables were used in the study:

Pretest score-the story of “Mulan Shih”. This variable is defined by the students’ score (0-20) on the pencil-and-paper-instrument, which was designed to determine the participants’ general knowledge of the story plot in “Mulan Shih” before they receive the subject lecture.

Posttest score-the story of “Mulan Shih”. This variable is defined by the students’ score (0-20) on the pencil-and-paper-instrument, which was designed to determine the participants’ general knowledge of the story plot in “Mulan Shih”. There are two posttests: Posttest 1 was conducted after the first teaching method was applied; Posttest 2 was conducted after the teacher applied the second teaching method.

The following independent variables were used in the study:

Method Treatment. This variable refers to the first teaching method in each sequence treatment, either expository or multimedia. Sequence 1 (multimedia—expository) first applies multimedia method in teaching the selected topic-“Mulan Shih”. Sequence 2 (expository—multimedia) first applies the expository method in teaching on the same subject.

The sequence of the instructional activity. This variable is consisted of two teaching methods: the expository and multimedia. Sequence 1 (multimedia—expository) applies multimedia presentation before using the expository approach in teaching the selected topic-“Mulan Shih”. Sequence 2 (expository—multimedia) applies the expository approach before using multimedia presentation on the same subject.

Research Hypothesis

Our hypotheses assumed that the difference in instructional sequence has major impact on the efficacy of the lecture concerning the selected Chinese narrative poem—“Mulan Shih”. And the following two hypotheses are formulated and assessed by a Split-Plot ANOVA statistical procedures at the 0.05 level of significance (α).

Hypothesis. There is significant difference in sequence effect over time between the two treatments (multimedia and expository) for students to learn the selected narrative poem-“Mulan Shih”.

Null hypothesis. There is no significant difference in sequence effect over time in the application of the two treatments (multimedia and expository) in students’ ability of learning.

The following are the two instruction sequences involved in this study:

Sequence 1. Apply multimedia before expository approach. (multimedia—expository)

Sequence 2. Apply expository approach before multimedia. (expository—multimedia)

Experimental Procedures

Pretest administration. A pretest of the story of “Mulan Shih” was given to all participants prior to the subject lecture. Directions were read aloud by the teacher to ask

the participants to complete the pretest (as well as the two posttests) without extra help from outside sources. Participants were also advised orally that the evaluation for the pretest (as well as the two posttests) is for a research program, and it is not an individual assessment that would be used for any other studies. Moreover, all tests were also coded for anonymity.

Treatment 1. Defined as a series of teaching methods using multimedia presentation to introduce an ancient Chinese narrative poem (“Mulan Shih”) followed by the expository method on the same subject. (Sequence 1: multimedia— expository)

Treatment 2. Defined as a series of teaching methods using the expository approach for the same topic used in Treatment 1 followed by the multimedia presentation. (Sequence 2: expository— multimedia)

Posttest 1. This was administered immediately to both experimenting groups after the application of the first teaching method of each treatment to evaluate the efficiency of the first teaching method.

Posttest 2. This was administered immediately to both experimenting groups after the application of the second teaching method of each treatment to evaluate the efficiency of the specified sequence.

Data Analysis

Analysis of data was completed in the following manner. A Split-plot ANOVA was used to compare the test item means on the dependent variable since there is no random assignment to groups. Because the treatments were conducted in intact classes, a Split-plot ANOVA was used to analyze the data in students’ ability level.

Split-plot ANOVA was selected for use since it estimates the treatment effect. This results in a more powerful test of the treatment effect. In face, any correlation (between a

pretest and a posttest or between two posttests) that is significant will result in a Split-plot ANOVA power advantage.

CHAPTER 4 RESULTS

This experiment was designed to investigate the effectiveness of alternating sequences of two teaching methods (expository and multimedia) in terms of the students' improvement in their test scores. The research question described in chapter 3 concentrated on whether the alternating instructional sequences of a multimedia and an expository method can effectively make content knowledge of literature more learner-friendly.

This chapter presents the descriptive statistics of the participants, and the results of the Split-plot ANOVA analysis, and concludes with a summary of major findings.

Descriptive Statistics of the Sample

Participants for this study were selected from a sample chosen by the investigator as a representative sample of public school students in North Florida. All 50 participants in this study came from two 11th grade language arts classes at P.K. Yonge developmental research school, Gainesville, Florida. The pupil/teacher ratio for each class is 24 students per teacher.

Table 4-1. Demographic Data for the P.K. Yonge Developmental Research School

white	Black	Hispanic	Asian	India	Multi-racial	Pupil/teacher ratio Grade 11 th
60.12%	23.99 %	10.12%	1.65 %	.52 %	3.57 %	24

Group Formation

The researcher randomly assigned two intact language arts classes to two experimental groups (one Treatment group and one Control group). However, the students were not randomly assigned for either the Treatment group or the Control group.

Treatment

All pretests and posttests in this study were paper and pencil tests (see Appendix A). A high school language arts teacher used a multimedia and an expository teaching method alternately in two sequences to test their efficiency. The selected topic of instruction was a Chinese narrative poem, “Mulan Shih”. The Treatment group started with a pretest followed by a lesson taught through a multimedia presentation. Then the students were administered posttest 1. A week later, the students were taught the same topic by the same teacher through the expository method, and they were administered posttest 2. The Control group followed the same pattern but reversed the sequence of the two teaching methods.

Hypothesis Testing

Analysis of a Split-plot ANOVA was used to compare the mean scores on the dependent variables (the pretest and the two posttests). The Split-plot ANOVA extends the ANOVA measurement by including information on some predictor, often a pretest measure. The study used Quasi-experimental design for the experimental groups since that random assignment is not possible. A Split-plot ANOVA estimates the difference between the treatments through tests. This results in a more powerful test of the treatment effect. The power advantages of a Split-plot ANOVA accrue to the extent that the pretest to posttest 1 and posttest 1 to posttest 2 are related.

A Split-plot ANOVA model analysis was done for three test scores (pretest, posttest 1, posttest 2). Descriptive statistics for test results are presented in the following tables.

Mauchly's test showed the value of Sphericity to be 0.022 (see Table 4-2), which violates the assumption of Sphericity. Therefore, Sphericity was no longer assumed. The Huynh-Feldt method was used instead to adjust the degree of freedom (df). Moreover, the value of df was changed to 1.837 after the adjustment so that the split-plot ANOVA test results could be used. (see Table 4-3)

Table 4-2. Mauchly's Test of Sphericity

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.
Test	.850	7.631	2	.022

Table 4-3. Tests of Within-Subject Effects (Huynh-Feldt)

Source	DF	Type III SS	Mean Square	F Value	Sig. (p-value)
Test	1.837	1656.373	901.831	198.039	.000
Test*	1.837	140.160	76.312	16.758	.000

sequence

Significant at the 0.05 level

The research hypothesis was used to test the efficacy of the sequence treatment on the students' comprehension of "Mulan Shih".

Hypothesis. Statistical analysis reported that there is significant difference in the students' test scores in sequence effect over time (as mentioned in chapter 3) between the Treatments (multimedia and expository) in learning the selected narrative poem-"Mulan Shih". The Treatment group was first administrated with the multimedia presentation and then the expository approach, while the Control group was treated in the reverse order. After the treatment, each group was tested (posttest 1& posttest 2). The pretest scores were used as one of the dependent variables which reflected the students' knowledge

level before they receive a subject lecture. The test scores were assessed by an analysis of interaction statistical procedure at the 0.05 level of significance (alpha). The p-value of this test is 0.000 ($p < 0.05$). The study result indicates that there is an interaction between the test and sequence. That is, the sequence effect over time is significant since the students' mean scores changed over the course of 3 consecutive tests in a positive tendency. The sequence effect over time is presented in table 4-3, 4-4 and figure 4-1.

Table 4-4. Descriptive Statistics of the Means and Standard Deviation for Pretest and Posttest Scores over Time

	Sequence	Pretest (O1)			Posttest1 (O2)			Posttest2 (O3)		
		N	M	SD	N	M	SD	N	M	SD
Treatment	1	25	5.68	1.887	25	12.96	2.59	25	15.64	1.68
Control	2	25	8.6	2.483	25	11.56	3.01	25	14.72	1.969

Significant at the 0.05 level

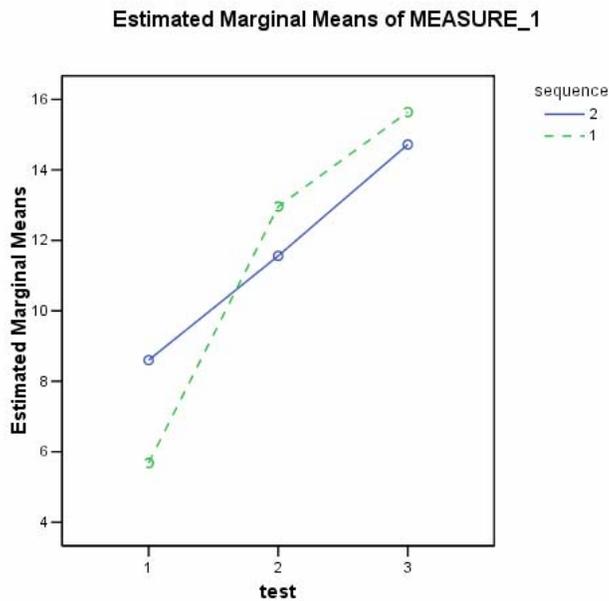


Figure 4-1. Sequence effect over time. test 1: pretest. test 2: posttest 1. test 3: posttest 2. Sequence 1: Treatment group. Sequence 2: Control group.

However, the students' mean score (15.64) of posttest 2 in sequence 1 (multimedia— expository) is not significantly different from that (14.72) of posttest 2 in

sequence 2 (expository— multimedia). In other words, the sequence difference (i.e. the final value of each graph in the above diagram) of the two methods (Multimedia and expository) does not have a significant effect on students' learning (sequence 1= 15.64, sequence 2= 14.72).

The result of the statistical report (see figure 4-2) did show that there was significant difference between the two testing teaching methods (multimedia and expository). The Treatment group was treated with a multimedia experiment, while the Control group was treated with an expository experiment. The test scores were then assessed by an analysis of comparing mean scores difference of each treatment group for its improvement from pretest to posttest1. Also, to compare the efficiency of each group for the same time frame, the table in figure 4-2 showed the Treatment group improved from the average score of 5.68 to 12.96 while the Control group only progressed from 8.6 to 11.56. The improvement of the students' scores from pretest to posttest 1 in Treatment group is significant different from that of the Control group. That means the different teaching methods do make significant difference in the students' comprehension. In addition, the graphs in figure 4-2, it appears that sequence 1 (multimedia— expository) is partially more efficient than sequence 2 (expository— multimedia). In conclusion, although sequence 1 was hypothesized to be more efficient than sequence 2, the statistical analysis showed that the efficiency of sequence 1 did not make a significant difference in the final score.

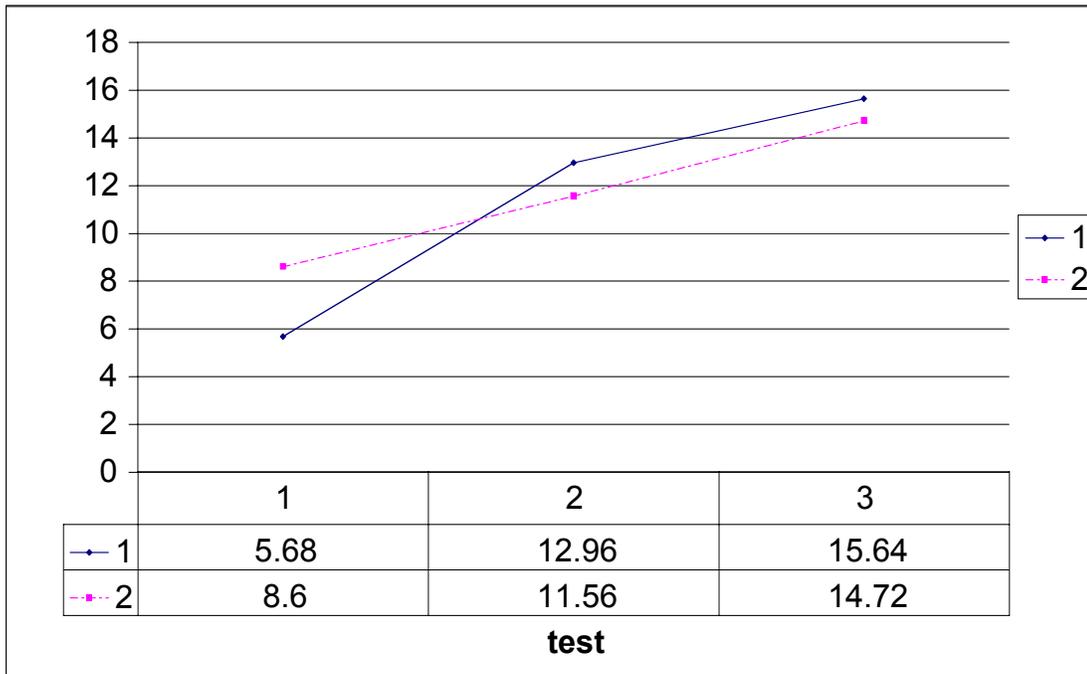


Figure 4-2. Mean scores change through tests in two sequences.

In examining the interaction between test and sequence, the significant value in table 4-3 indicated that the sequence effect over time is significant since the p-value is less than 0.05.

All in all, the statistical analysis in the Split-plot ANOVA model showed that sequence difference was not proven to have a significant effect in the final scores (posttest 2), but the sequence effect over time was proven to be significant. Therefore, sequence is a relatively unimportant factor in explaining the variations between the two groups' final scores, but it is still important in explaining the improvement of the students' scores through the experiment since both the graphs in figure 4-2 slope upward.

Table 4-5 demonstrates the comparison of the two experimental groups in their test scores, from pretest to posttest 2. Sequence 1 (multimedia— expository) is shown to be more effective than sequence 2 (expository— multimedia).

Table 4-5. Mean Scores Differences Between Tests in Two Groups

Group	Mean Score			Mean Score difference	
	O1	O2	O3	O2-O1	O3-O1
Treatment group	5.68	12.96	15.64	7.28	9.96
Control group	8.6	11.56	14.72	2.96	6.12

O1: pretest, O2: posttest 1, O3: posttest 2

Both method and sequence have a positive effect on students' scores. That is, the effect of sequence of two methods tested over tests is significant in enhancing the efficiency of instruction in the specified Chinese literature topic.

Summary

This study investigated the sequence effect of a multimedia presentation verses an expository teaching method involving a Chinese narrative poem ("Mulan Shih") at the high school level. The statistical analysis showed that there is significant difference in the students' test scores in the sequence over time between the two experimental groups.

In addition, different teaching methods do make a significant difference in the effect of the students' comprehension of selected topic. The statistical report indicated that the multimedia presentation was more efficient in conveying a selected subject.

The comparison of the improvement of the two experimental groups in their test scores (from pretest to posttest 2) showed that sequence 1 (multimedia— expository) is more effective than sequence 2 (expository— multimedia).

CHAPTER 5 DISCUSSION

This study investigated how the presentation sequence of two different instructional methods (multimedia and expository) impacted high school students' ability to learn the Chinese narrative poem "Mulan Shih." Empirical tests demonstrated that students' scores increased in sequence over time. The statistical report indicates that the improvement of the students' scores (from pretest to posttest 2) for the Treatment group (i.e. sequence 1: multimedia— expository) was significantly different than that of the Control group (i.e. sequence 2: expository— multimedia). The test results also show that the multimedia method is more efficient than the expository method.

Since the study results indicated that multimedia was effective in enhancing students' learning ability in a selected literature topic, multimedia technology was evidenced to become an important tool in helping improve Chinese literature instruction. In this study, a multimedia product, "Mulan-tech-rich lesson" was used as the multimedia presentation. Based upon attempts to improve learner-friendliness, the researcher created the Mulan multimedia product, which includes moveable parts to animate illustrations and buttons that deliver songs and sound effects. Thus, the content in "Mulan-tech-rich lesson" is interactive and fully animated. The story of "Mulan Shih" was presented in terms of a storybook in this multimedia product. In other words, the electronic storybook played an important role in this multimedia product of the selected literature topic. Before the investigator's "Mulan-tech-rich lesson" was made, Mulan's story had been included in children's storybooks of various types of multimedia technology (Mulan animated

storybook, 1998). Meanwhile, with an increased emphasis on learning interest and human learning, storybooks have become a natural and powerful tool in instruction (Jonassen & Hernandez, 2002). A research project concerned with the application of various electronic storybooks in language and literature instruction also confirmed the effectiveness of electronic storybooks in literature instruction (Chen, Ferdig & Wood, 2003).

Instructional Implications of This Study

In this study, the alternative sequences of two delivery methods (multimedia and expository) were applied in the two experimental groups. The instructional design of this study was composed of a traditional teaching method accompanied by a computer-based multimedia presentation to demonstrate a selected literature topic. Although the result of this study showed a positive effect in the instructional sequence, some changes and advanced improvements in the design of the instructional structure might lead to a better effect in Chinese literature instruction in the future.

This study showed that multimedia was a powerful tool for enhancing the students' learning ability. Accordingly, more printed material in traditional lectures could be incorporated into the multimedia resources for students to browse instead of being taught by the teacher in limited class time. These technology-based resources may include background information and vocabulary or the symbols and expressions of a selected literature topic for students to preview before the class. Consequently, students would receive the outline of the concept of what they are going to learn in the selected literature topic. The benefits of these multimedia resources are that the students receive the peripheral information in advance so that the teacher can save time in introducing the background information in class. In other words, students do not passively accept

knowledge from their teacher as part of the lesson. Instead, they are responsible for learning the literature material before the class through multimedia resources.

Second, the electronic storybook designed for a specific literature topic could be presented through computers in the classroom. More specified categories related to the selected literature topic would be included in the electronic storybook. In the second stage, the teacher in the classroom assists his/her students in learning the subject with the multimedia product.

Finally, instead of lecturing the subject content which has been posted online to his/her students, the teacher reviews and summarizes the content of the subject for his/her students in an interactive way to help them remember the important elements of the subject content.

This would result in teachers having fewer lectures in their class, allowing them the time to assist their students through the learning process. That is, literature teachers should gradually change their teaching approach and their roles in the setting of a traditional literature class. To the end, multimedia technology is an important tool in providing different teaching methods for literature instruction.

The Implication for Future Study

This study was done without randomly assigning subject to groups. The lack of random assignment may have contributed to the results obtained. As a result, the researcher suggests the application of individual random assignment in the future replication of the study.

This study also showed that multimedia material did effectively improve students' learning and entices their interest in the selected Chinese literature topic. The result of

this study also implied that the electronic storybooks have potential in improving the Chinese literature instruction.

However, researchers should be concerned about how to make electronic storybooks meet the needs of effective literature instruction. In other words, how electronic storybooks could work for the improvement of literature instruction becomes an important issue to be considered. That means that researchers need to explore ways that electronic storybooks have been applied in literature or language instruction successfully, and test whether or not similar models of electronic storybooks work for the specified literature topic. That is, the evaluation and assessment of electronic storybooks are the prerequisite for preparing effective multimedia material in literature instruction.

Additionally, the study results indicated that instructional sequence has significant importance in affecting students' scores in learning a selected literature topic. The study results also implied that instructional sequence affected students' learning interest. When the multimedia presentation was presented prior to the expository method in a sequence, students tended to better understand the selected topic. Based on the statistical results, the expository method was proved to be less effective than the multimedia method in the first stage in the sequence. That is, the expository method may not be as effective as the multimedia presentation in the beginning of the instruction; however, it was still effective when it was applied after a multimedia presentation in an instructional sequence. The point is, if the expository method was arranged well in the sequence, it helped the multimedia method in the whole instructional process and finally resulted in an improvement of students' learning. In other words, the expository method may not be the best choice at the beginning of a literature instruction, but it was a stable and acceptable

way to support other teaching methods. Accordingly, researchers should explore the effectiveness of an expository method, which is applied in the literature cases. In addition, the renovation of the expository method is also significant in improving the instructional effectiveness. Likewise, research related to the effective instructional sequence including the expository method should be explored in view of the integration of effective instructional strategies. In future studies, the researcher should consider the issue of arranging proper methods in different time frames in order to get the effective instructional sequence (Jalongo, M., Dragich, D., Conrad, N. & Zhang, A., 2002).

This study demonstrated that Chinese literature instruction could be improved through the integration of human learning, electronic storybooks and literature elements in an effective instructional sequence. Future studies may target the possibility of designing Chinese literature instruction in terms of integrating literature elements and electronic storybooks. At the same time, researchers need to analyze interactions among technology application, literature elements, and storybook literacy in the instructional sequence. This study also indicates that additional research regarding the effectiveness of sequence and the relationship between integrating literature elements and electronic storybook should be performed.

Another issue to be explored is how individuals will interact with the computer presentation with the same ease as the traditional classroom instruction. In other words, how the interface design of the computer simulation of teaching fits these human sense operations of the learners so to reduce their apprehension in learning through computer presentation.

APPENDIX
THE TEST ITEMS OF THE STORY OF MULAN SHIH

I. True and false: write your answer to each question in the blank provided.

- _____ 1. Mulan has an older brother.
- _____ 2. The she-hare's eyes are sharp.
- _____ 3. Go to the East, Mulan buys a good horse.
- _____ 4. Mulan fixed her hair by the door.
- _____ 5. Mulan weaves by the window.
- _____ 6. Mulan's comrades were not shocked to find out her true gender.
- _____ 7. At dawn, Mulan departs from her parents.
- _____ 8. Mulan can hear her parents calling her in the wilderness.
- _____ 9. Mulan can't concentrate on weaving because she's in love with a man.
- _____ 10. Mulan Shih is a folksong written in North Dynasty.

II. Fill in the Blanks: write the correct answer in the space provided.

- Mulan answered the draft in 1 _____'s place.
- Mulan Shih later became a narrative poem, but it still retains the simplicity nature of a 2 _____.
- In the ancient China, the Emperor meets his officials at the 3 _____.
- Go to the East, Mulan buys a 4 _____.
- In the ancient wild West of China and among other Northern tribes, the people address their King as 5 _____.
- When Mulan weaves , one hears 6 _____ instead of the shuttle of a loom.
- After Mulan left home, she travels through the 7 _____ Mountain.

- Casualties are **8** _____ even among Generals.
- Mulan's parents meet her at the **9** _____ when she returns.
- Mulan's military life lasted **10** _____ years.

LIST OF REFERENCES

References in English

- Astronomical Society of the Pacific (1992). *A private universe*. San Francisco CA.
- Blumer, H. (1969). *Symbolic interactionism: Perspective and method*. Englewood Cliffs, NJ: Prentice-Hall.
- Bruner, J. (1990). *Acts of meaning*. Cambridge: Harvard University Press.
- Brooks, J. & Brooks, M. (1993). *In search of understanding: The case for constructivist classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Bruning, R., Schraw, G. & Ronning, R. (1995). *Cognitive psychology and instruction (2nd Ed.)*. Englewood Cliffs, NJ: Prentice Hall.
- Cheek, D. (1992). *Thinking constructively about science, technology and society education*. Albany, NY: State University of New York Press.
- Chen, M., Ferdig, R., & Wood, A. (2003). Understanding technology-enhanced storybooks and their roles in teaching and learning: An investigation of electronic storybooks in education. *Journal of Literacy and Technology*, Vol.3, n.1, Retrieved from <http://www.literacyandtechnology.org/v3n1/chenferdigwood.htm>
- Chera, P., & Wood, C. (2003). Animated multimedia talking books can promote phonological awareness in children beginning to read. *Learning and Instruction*. Vol.13, n.1, 33-52.
- Chin, C. & Arai, T. (1993). *China's bravest girl: The legend of Hua Mu Lan*. Emeryville, CA. Children's Book Press.
- Chuang, C.J. (1975). The function of imagery in learning of Chinese language. *Acta Psychologica Taiwanica*, Vol.1, 145-150.
- Classical Chinese Poetry (2004). Retrieved April 26, 2004 from <http://www.chinapage.com/poetry9.html>
- Cognition and Technology Group at Vanderbilt (1996). Looking at technology in context: A framework for understanding technology and education. In: D.C. Berliner and R.C. Calfee, Editors, *The handbook of educational psychology*, Macmillan Publishing, New York, NY. 807-840.

- Disney, (1999). Tales from the Magic Kingdom—Mulan. Published by Disney Interactive. 500 South Buena Vista St., CA.
- Frankel, H. Interpretations of Chinese poetry. Retrieved April, 2003 from <http://mulan.disneyfriends.net/thingstoread/poem.htm>
- Fabricius, W. (1983). Piaget's theory of knowledge: Its philosophical context. *Human Development*. Vol. 26, 325-334.
- Geary, D. C. (1995). Reflections of evolution and culture in children's cognition; Implications for mathematical development and instruction. *American Psychology*, Vol.50, 24-37.
- George, P. (2002). Some thoughts on narrative-will someone please tell me what narrative is? Retrieved October, 2002 from <http://puppet.cogs.susx.ac.uk/users/pat/narrativeDoc.htm>
- Goetz, L. & others (1985). Using a behavior chain interruption strategy to teach communication skills to students with severe disabilities. *Journal of the Association for Persons with Severe Handicaps*. Vol.10, n.1, 21-30.
- Goldman, S. (2003) Learning in complex domains: When and why do multiple representations help? *Learning and Instruction*. Vol.13, n.2, 239-244.
- Goldman, S. & Rakestraw, J. (2000). Structural aspects of constructing meaning from text. In: M.L. Kamil, P. Mosenthal, P.D. Pearson and R. Barr, Editors, *Handbook of reading research*. Vol.3, 311–335.
- Glasgow, J. (1996). It's my turn! Part II: motivating young readers using CD-ROM storybooks. *Learning and Learning with Technology*. Vol.24, 18-22.
- Glynn,S. (1994). Teaching science with analogies: A strategy for teachers and textbook authors. *Reading research report # 15*. Athens GA: National Reading Research Center (ERIC ED373306).
- Gudmundsdottir, S. (1995). The narrative nature of pedagogical content knowledge. In H. McEwan & K. Egan (Eds.), *Narrative in teaching, learning and research*. NY: Teachers of College Press. No. of pages: 12.
- Gulmans, J. & van den Berg, R. (1992). A videodisc program for the acquisition of diagnostic skills in health education. Publication: Netherlands. No. of pages: 23.
- Hanley, S. (1994).NSF Cooperative Agreement No. Due 9255745 on consturctivism. *Maryland Collaborative for Teacher Preparation*. Retrieved February, 2004 from <http://www.inform.umd.edu/UMS+State/UMD-Projects/MCTP/Essays/Constructivism.txt>

- Hargis, J. (2001). Can students learn science using the Internet? *Journal of Research on Computing in Education*. Vol.33, n.4, 475.
- Hermans, H. (1997). Self-narrative in the life course: A contextual approach. In M. Bamberg, *Narrative development: Six Approaches*. Lawrence Erlbaum, London, 223-264.
- Holsti, O. (1969). *Content analysis for the social science and humanities*. Reading, MA: Addison-Wesley. 14-37.
- Hong Kong Curriculum Development Committee (CDC) (1984). *Guide to the Kindergarten curriculum*, Hong Kong Education Dept.
- Hong Kong Curriculum Development Committee (CDC) (1990). *Chinese language syllabus for primary schools*, Hong Kong Education Dept.
- Huang, J. & Liu, I. (1978). Paired-associate learning proficiency as a function of frequency count, meaningfulness, and imagery value in Chinese two-character ideograms. *Acta Psychologica Taiwanica*. n.67. 5-17.
- Huang, A. (1997). Challenges and opportunities of online education, *Journal of Educational Technology Systems*. Vol.25, n.3, 229-247.
- Huberman, M. (1995). Working with life-history narratives. In H. McEwan & K. Egan (Eds.) *Narrative in teaching, learning and research*. NY: Teachers of College Press.
- Hung, D.L. & Tseng, O.J.L. (1981). Orthographic variations and visual information processing. *Psychological Bulletin*. Vol. 90, 377-414.
- Isaac, S. & Michael, W. (1981). *Handbook in research and evaluation: a collection of principles, methods, and strategies useful in the planning, design, and evaluation of studies in education and the behavioral sciences*. San Diego, California: EDITS Publishers.
- Jalongo, M., Dragich, D., Conrad, N. & Zhang, A. (2002). Using Wordless Picture Books To Support Emergent Literacy. *Early Childhood Education Journal*. Vol.29, n.3, 167-177.
- Jiang, C., Jiang, W., Chiang, W., Chiang, C. & Jian, C. (1997). *The legend of Mu Lan: a heroine of ancient China*. Monterey, CA: Victory Press.
- Jonassen, D. & Hernandez-Serrano, J. (2002). Case-based reasoning and instructional design: using stories to support problem solving. *ETR&D*, Vol.50, n.2, 65-77.
- Ki, W. (1994). A knowledge-based multimedia system to support the teaching and learning of Chinese characters. *Educational multimedia and hypermedia. World Conference on Educational Multimedia and Hypermedia*, June 25-30.

- Kingston, M. (1976), Rei, (1989). *The warrior woman: memoirs of a girlhood among ghosts*. New York: Vintage Books.
- Kozma, R. (1994). Will media influence learning? Reframing the debate. *Educational Technology Research and Development* Vol.42, 1–19.
- Kwong, S. (1990). *The syntactic development of Cantonese-speaking preschool children*. M.Ed. Thesis, University of Hong Kong.
- Lam, H.C., Pun, K.H., Leung, S.T., Tse, S.K. & Ki, W.W. (1993). Computer assisted learning for learning Chinese characters. *Communications of COLIPS, and International Journal of the Chinese and Oriental Language Processing Society*. Vol.3, n.1.
- Lee, J. (1995). *The song of Mulan*. Arden, NC: Front Street.
- Levie, W. & Lentz, R. (1982). Effects of text illustrations: A review of research. *Educational Communication and Technology Journal*. Vol.30, 195–232.
- Liao F. & Tsang, E. (1995). A comparative perspective: a way to develop self-study Chinese learning materials on the basis of the experience of the National Open University, Taipei, and the Open Learning institute of Hong Kong. *Proceedings of the 4th Annual Conference of the Asian Association of Open Universities*, Vol.3-5, 322-338.
- Lock, A. (1998). Narratives and Infancy. Discussion paper given at the symposium on Narrative analysis of early developmental processes, *Xith Biennial International Conference on Infant Studies*, Atlanta, 2-5th April. Retrieved at April 26, 1998 from <http://www.massey.ac.nz/~Alock/virtual/atlanta.htm>
- Mandl, H. & Levin, J. (1989). *Knowledge acquisition from text and pictures*. North-Holland, Amsterdam.
- Mayer, R. & Gallini, J. (1990). When is an illustration worth ten thousand words? *Journal of Educational Psychology*. Vol.82, n.4, 715-726.
- Mayer, R. (2003). The promise of multimedia learning: using the same instructional design methods across different media. *Learning and Instruction*. Vol.13, n.2, 125-139.
- Morris, C., Bransford, J. & Franks, J. (1977) Levels of processing versus transfer appropriate processing. *Journal of Verbal Learning and Verbal Behavior*. Vol.16, 519–533.
- Mulan-Animated Storybook (1998). Published by Disney Interactive. 500 South Buena Vista St., CA.

- Multimedia Language Center (2004), Retrieved at April 26, 2003 from <http://wings.buffalo.edu/world-languages/lab/labs.htm>
- Nicolopoulou, A. (1997). Children and narratives: toward an interpretive and sociocultural approach. In M. Bamberg (Editors). *Narrative development: six approaches*. Lawrence Erlbaum, London. 179-215.
- Ogletree, B. & others (1995). An innovative language treatment for a child with high-functioning autism. *Focus on Autistic Behavior*. Vol.10, n.3, 1-10.
- Quasthoff, U. (1997). An interactive approach to narrative development. In M. Bamberg, *Narrative development: Six Approaches*. Lawrence Erlbaum, London.
- Paivio, A. (1971). *Imagery and verbal processes*. New York: Holt, Rinehart, & Winston.
- Paivio, A. Clark J. & Lambert, W. (1988). Bilingual dual-coding theory and semantic repetition effects on recall. *Journal of Experimental Psychology*. Vol.14, n.1, 163-172.
- Peterson, R. (1997). Visual memory and learning: A study of children's "use of art and language to communicate their knowledge of science." *Paper Presented at the 70th Annual Meeting of the National Association for Research in Science Teaching*, Chicago IL.
- Polkinghorne, D. (1988). *Narrative knowing and the human sciences*. Albany: State University of New York Press.
- Pyle, E. & Akins-Moffatt, J. (1999). The Effects of Visually-Enhanced Instructional Environments on Students' Conceptual Growth. *The Electronic Journal of Science Education*. Vol. 3, n.3, 23-34.
- Raat, J. (1992). Technology education: a global perspective. In E.A. Bame, W. E. Dugger, & M. Sanders (Eds.). *Communication technology: Today and tomorrow*. Mission Hills, CA: Glencoe/McGraw-Hill.
- Randall, W. (1999). Narrative intelligence and the novelty of our lives. *Journal of Aging Studies*. Vol.13, n.1, 11-28.
- Reimann, P. (2003). Multimedia learning: beyond modality. *Learning and Instruction*. Vol.13, n.2, 245-252.
- Renner, J. (1983). *Sequencing language and activities in teaching high school Physics*. National Science Foundation. U. S. Oklahoma.
- Rose, G. (1996). Teaching Visualised Geographies: Towards a Methodology for the Interpretation of Visual Materials. *Journal of Geography in Higher Education*. Vol. 20, n.3, 281-294.

- Schafer, R. (1981). *Narration in the psychoanalytic dialogue*. In W. J. T. Mitchell (Ed.), *On narrative*. Chicago: University of Chicago Press.
- Schnotz, W., & Lowe, R. (2003). External and internal representations in multimedia learning. *Learning and Instruction*. Vol.13, n.2, 117-123.
- Schnotz, W., & Bannert, M. (2003). Construction and interference in learning from multiple representation. *Learning and Instruction*. Vol.13, n.2, 141-156.
- Schunk, D. (1996). *Learning theories*. (2nd ed.). Englewood Cliffs, NJ: Prentice Hall. 208-209.
- Sharpe, D. (1996). Out with the Old, In with the New: Transition to Technology Education Issues in North America. *Journal of Design and Technology Education*. Vol.1, n.1, 24-36.
- Shimkin, D. (1993). Telling tales: bridging the gap between narrative tales and critical insights. *Annual Meeting of the Conference on College Composition and Communication*, March 31-April 3.
- Shiu, P.K. & Lau, S. (1982). The association pattern of Chinese characters of Hong Kong kindergarten children. *Psychological studies of Chinese language*, S.R. Kao & C.M. Chen (eds.). 103-122. Taiwan: Wenhe.
- Souci, S., Tseng, J., & Tseng, M. (1998). *Fa Mulan: the story of a woman warrior*. New York: Hyperion Books for Children.
- Sutton, C. (1992). *Words, Science, and Learning*. Philadelphia: Open University Press.
- Tennyson, R. & Tennyson, C. (1977). Content Structure as a Design Strategy Variable in Concept Acquisition. *The Annual Meeting of American Educational Research Association*. New York, April 4-8.
- Tennyson, R. (1985). Adaptive Control of Learning Time and Content Sequence in Concept Learning Using Computer-Based Instruction. *Journal of Educational Psychology*. Vol.77, n.4, 481-91.
- Thornell, J. (1977). Effects of an instructional sequence variable in task presentation. *Southern Journal of Educational Research*. Vol.11, n.2, 95-98.
- Tseng, O.J.L. & Wang, W.S.Y. (1983). The first two R's. *American Scientist*. Vol.71, 238-243.
- U.S. Department of Education. (1996). Getting America's students ready for the 21st century—meeting the technology literacy challenge, a report to the nation on technology and education. Retrieved at April 26, 2004 from <http://www.ed.gov/about/offices/list/os/technology/plan/national/index.html>

- White, H. (1981). The value of narrativity in the representation of reality. In W. J. T. (Ed.), *On narrative*. Chicago: University of Chicago Press.
- Weiger, L. (1915). *Chinese characters, their origin, etymology, history, classification and signification*. New York, Paragon Book Reprint Corp. [1965].
- Willows, D. & Houghton, H. (1987). The psychology of illustration. *Basic Research*. Vol.1, Springer-Verlag, NY.
- Woodward, A.(1989). Learning by pictures: comments on learning literacy, and culture. *Social Education*. Vol.53, 101-102.
- Yaden, D., Smolkin, L., & Conlon, A. (1989). Preschoolers' questions about pictures, print conventions, and story text during reading aloud at home. *Reading Research Quarterly*. Vol.24, 188-214.
- Yager, R. (1991). The constructivist learning model, towards real reform in science education. *The Science Teacher*. Vol.58, n.6, 52-57.
- Zhang, S. N. (1998). *The ballad of Mulan*. Union City, CA: Pan Asian publications.

References in Chinese

- Chen, Y. 陳友冰 (2000). 木蘭詩與木蘭歌, 國文天地, Vol.16, n.1
- Chiang, C. 蔣治中 (1999). 木蘭詩導讀札記, 國文天地, Vol.15, n.4
- Chou, C. 周建江 (1997). 歷史,民族情結的回響——“木蘭詩” & “敕勒歌”的文化本初. 煙台大學學報. Vol.4
- Confucius, (東周)孔子. (宋)朱熹. 中華書局(1966). 四書集注.台北, 中華書局.
- Hou, C. 侯潔之 (1988). 木蘭詩的語言藝術, 中國語文, Vol.536.
- Hsieh, C. (明)謝榛. 王雲五(1936). 四溟詩話. 上海, 商務出版社
- Hsu, S. (漢)許慎. (清)段玉裁. 黎明出版社(1976). 說文解字注. 台北.黎明出版社.
Shuowenjiezi (100). *The analysis of Chinese characters*. H.K.: Chung Wah, Reprint.Thales, (1999). Symbolism the language of metaphysics. Hung, S.
洪申我(2000). 木蘭詩的另一種解讀. *Journal of Liming Vocational University*. Vol.29, n.4.

- Kuo, M. (宋)郭茂倩. 中華書局(1979). 樂府詩集. Yueh-Fu—the Music Bureau. 北京, 中華書局.
- Li Bai (唐)李白. (清)王琦. 華正書局(1979). 李太白全集. 台北, 華正書局.
- Liu, 劉大傑 (1973), 中國文學發展史. 上海, 上海人民出版社.
- Mo, K. 莫廣詮 (1986). 淺析木蘭辭, 新亞生活. Vol.7, n.15.
- Shen, D. (清)沈德潛. 中華書局(1966). 古文緒論;說詩碎語;文心雕龍. 台北, 中華書局.
- Shen, D. (清)沈德潛. 商務書局(1975). 古詩源. 台北, 商務出版社.
- 中國古典文學精粹選讀(上), (1995). 語文出版社. 北京. Vol.1.

BIOGRAPHICAL SKETCH

My name is Minchu Chen. I am a doctoral graduate student currently majoring in educational technology at the University of Florida.

Before attending the University of Florida, I was employed as a full-time instructor at the Center of General Education at Chang Gung University in Taiwan where I taught courses in Chinese literature from September of 1995 to August of 1999. I also served as Chief of the Division of Curriculum in the office of the dean, from June of 1998 until August of 1999.

In my capacity as Chief of the Division of Curriculum, I became very familiar with what is needed to foster an exemplary instructional program for university faculty members. Rather than being an expert in any one field, I prefer to promote excellence and creativity in teaching across a broad spectrum of academic endeavors by acting as a faculty facilitator, thereby making the best use of my talents and abilities.

In the fall of 1999, I enrolled at the University of Florida, where I am currently specializing in curriculum and educational system designs, performance technology, information-based teaching, problem-based teaching, assessment design, and other related disciplines.

For the 2000 spring semester here at the University of Florida, I have worked for the Southeastern University and College Coalition for Engineering Education (SUCCEED) and have been a research assistant at the Electrical and Computer Engineering Department. SUCCEED seeks to promote teaching excellence at the college

level by integrating current technologies. Also, I helped develop the “Lecture on Demand” method of using multimedia streaming technologies with the Asynchronous Learning Network (ALN) model. The online ALN content includes a classroom lecture which is web-cast live on the Internet and then post-processed to add other components such as synchronous PowerPoint slides.

In addition to these projects, I helped design multiple web pages for other online courses, as well as templates for virtual classrooms. Later, I carefully researched and evaluated the effects of online learning in general.

I worked as an assistant from May, 2001, to December, 2003, in the Office of Educational Technology in College of Education at UF. I was responsible for the workshop of faculty development and student electronic portfolio and the individual consultation for technology teaching on both of them. In addition to these, I also worked for the online tutorial for helping students and faculty get online support:

<http://www.coe.ufl.edu/school/portfolio/tutorials.htm> Then I evaluated the students’ electronic portfolios to suggest whether they are qualified enough in technology requirement to graduate or not. The result may be reviewed at <http://www.coe.ufl.edu/school/portfolio/index.htm>