明新科技大學　校內專題研究計畫成果報告

整合語意構圖與策略訓練於閱讀教學
Integrating Semantic Mapping with Strategy Training for
Reading Instruction

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中文摘要

　　在今天的社會環境裡，理解並且能運用英文乃是不可或缺的技能，許多學生仍然有困難理解英語教科書，更不用說具有用英語交流的能力。這種情形將嚴重影響到他們的就業競爭力。因此，改進他們的英語能力是刻不容緩的。

　　閱讀是核心語言能力，本研究計畫主要的目標是要改善學生的閱讀能力。要能夠流暢的閱讀，則學生必須要有豐富的字彙、句型結構、閱讀策略的知識。

　　字彙存量的多寡是閱讀文章能否有基本了解的重要關鍵。本研究計畫第一步要探討如何擴充學生的字彙存量，以提升他們的閱讀信心。所要採用的單字建構技巧是以音位感知訓練為基礎。此一訓練已被證實在改善學生的拼字能力方面是有效的 (Bruck & Waters, 1988; Goswami, 2000)。

　　閱讀策略已證實為良好閱讀者使用的重要技巧 (Nunan, 1990)。閱讀策略可以被用來猜測單字文句的意思，或檢查各段落的了解程度以確保對整體文章的理解。語意構圖教學可幫助學生掌握文章架構與大綱。閱讀策略與語意構圖教學都對文章內容的了解有助益。

　　閱讀乃是一種互動的過程，本研究計畫提出一種整合閱讀與寫作的教學法以使閱讀更具有互動溝通的特性。本教學法結合語意構圖技巧、閱讀策略訓練與溝通式教學於閱讀教學中。

　　兩組學生分別施行前測及後測、閱讀理解能力測驗、單字存量以及閱讀策略問卷以檢驗進步的情形。並且運用 SPSS 統計軟體分析資料。

　　教學實驗結果顯示學生的閱讀理解能力與閱讀策略運用都有提昇。字彙存量也增加了。由於教學法溝通的特質，訓練過程中所有活動都會要求口述與寫作。專案研究計劃結束時，大多數同學都能說流利的英語。溝通式閱讀可同時培養閱讀、寫作、聽講、與口述能力。好的教學法應同時培養所有的語言技巧，並達成學習語言最重要的目的，亦即溝通。

關鍵詞：

音位感知訓練（Phonemic Awareness training)
語意構圖技巧 (Semantic Mapping technique)

ABSTRACT

Though in today's environment the ability to understand and apply English is an indispensable competence, many students have trouble comprehending English textbooks, not to mention the ability to communicate in English. This surely jeopardizes their ability to compete in the job market. Therefore, it is urgent to improve their English language competency.

Since reading was the core language skill, this study mainly aimed to improve student's reading capability. In order to read fluently, students must have good knowledge of vocabularies, sentence structures, and reading strategies.

The quantity of vocabulary inventory was critical to the basic understanding of the text. The first step of this study was to help students expand their vocabulary inventories and gain confidence toward reading. The word building technique applied in this research project was based on the PA (Phonemic Awareness) training, which had been claimed to be effective in improving student's spelling ability (Bruck & Waters, 1988; Goswami, 2000).

Reading strategies were proved to be essential skills used by good readers (Nunan, 1990). Strategies can be used to guess the meaning of words and sentences to ensure correct understanding and to check the understanding of each paragraph as a whole. Semantic mapping instruction was used to help students grasp the framework and outlines of writing. Both strategy and semantic mapping contributed to the comprehension of the text.

Since reading was an interactive process, a communicative reading pedagogy which intended to integrate reading with writing to make reading more communicative and interactive was proposed. This pedagogy incorporates semantic mapping technique, the reading strategy training, and communicative language teaching into the reading instruction.

Pretest and posttest were given to both control and experimental groups to examine their improvement in reading comprehension, vocabulary inventory, and a questionnaire for their reading strategy use. After the experiment was completed, t-test and ANCOVA were used to analyze the collected data.

The experimental result showed that students in both groups made improvement in their reading comprehension scores and metacognitive strategy use. And the students in the experimental group outperformed students in the control group. Both groups showed increases in their vocabulary inventory.

Due to the communicative nature of this pedagogy, the activities within this training require both writing and speaking. Consequently, at the end of this study most students can speak English fluently and some even claimed they have never tried hard to speak before taking this course. Reading communicatively can insinuate reading, writing, listening, and speaking competency. A good pedagogy should cultivate all language skills and achieve the most important goal of learning a language to communicate.

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CHAPTER 1

Introduction

Research Background

The globalization has manifested the importance of acquiring English language competency. The demand for better English competency has become more imminent than ever before. Among the four language skills, reading can be the most important one for a second language learner. Anderson (2006) advocated reading laid the foundation for learning listening, speaking, and writing skill.

Yet, most students in our school have difficulties reading and writing technical English due to their low vocabulary inventory. Laufer (1997) proposed a minimum vocabulary size of 3000 words for reading comprehension. Vocabulary memorization training is important to facilitate reading. Pronunciation was acknowledged by students as useful for learning vocabulary (Schmitt, 1997). Phonological awareness (PA) training was claimed to improve spelling and reading competency (Bruck & Waters, 1988). The letter-sound correspondence facilitates good information for spelling the letters in the words by their sounds. Based on the phonological awareness training, a vocabulary memorization technique is used to help students review their pronunciation and identify word patterns, and increase their vocabulary inventory.

Since reading and writing are interactive processes, learning how authors organize the text and expand on the main ideas will enhance both reading and writing competence. Semantic mapping instruction can be used to help students grasp the framework and outlines of writing. Hence it was demonstrated to be effective for teaching reading and writing (Grabe & Kaplan, 1996). Reading strategies had been proved to be effective in enhancing reading comprehension (Palincsar & Brown, 1984; Carrell et al, 1989; Cotterall,1990; Song, 1998). Strategy training can insinuate learning from the interaction of the bottom-up (the fundamental linguistic skills) and top-down (active extraction of meaning) process. Presumably incorporating semantic mapping and strategy training into the reading instruction will improve the comprehension of the written text.

Because reading can be a strong component in the language learning process, the question is how can teachers or instructors make it more productive and efficient. Reading by itself is a communication with the author; the author's words are in written form, and the interaction is between the text and the reader. If reading can be made to feel as if a person is talking to the author directly, reading may become more vivid, interesting, and more communicative, and the motivation to read may become stronger. The answer lies in converting reading into a communicative task—an interactive

process.   Besides incorporating skills in strategy and semantic mapping for better understanding, students should be taught to read communicatively; they should be able to ask the author what they want to know and find out what the author intends to say.

In addition, a communicative reading pedagogy should focus on problem-solving activities selected from material familiar to the students in order to increase students' interest. Communicative reading instruction should not deny the importance of teaching vocabulary, grammar, and sentence translation. It only promotes the goal of language learning a step forward to address the importance of reading with the purpose of utilizing the knowledge in real life interactions

The main purpose of this project is to evaluate the effect of integrating the semantic mapping into communicative reading instruction to help students organize their content for better understanding of a reading text. This reading instruction will be called Integrated CRI Reading Instruction in the following text. Further more, in view of the deficiency of students in pronunciation and low vocabulary inventory, a vocabulary memorization training based on phonemic awareness was used to lay a good foundation for reading. The textbook used in this project was also evaluated by students' comments for future improvement and the result will be reported to the textbook company as an academic cooperation between school and the book company.

Statement of the Problem

Traditional reading instruction teaches English with emphasis on vocabulary, grammar explanation, and text translation methods. The language is narrowed down to only a set of linguistic rules. Students learning under this traditional method may be diverted from the real usage of language, that is, to communicate as effectively as possible with other individuals. With a focus on linguistic rules versus real communication, students' motivation to learn English can be seriously impaired. The end result is that a number of students in Taiwan have problems speaking and writing in English. Some can be forced to recognize words and rules by rote memorization; others might just give up trying, but, in the end, they have little desire to communicate in English.

Will a nontraditional reading instruction approach incorporating the semantic mapping and strategy training and aiming at teaching students to read communicatively and strategically improve their motivation to learn English, develop better strategies toward reading, and produce visible improvements in reading comprehension? Although, some empirical studies identify the translation instruction method as stifling and hindering the development of students' language learning (Le, 1969; Thompson, 1991; Rozien,1984), a review of literature revealed that few specific studies compare the effects of traditional reading instruction (with an emphasis on linguistic rules) vs. non-traditional reading instruction such as Integrated CRI instruction (with an emphasis

on communicative reading) on Taiwanese EFL learners' reading comprehension levels, and metacognitive strategy use. This experimental study will contribute to provide empirical evidence in these domains.

Purpose of the Study

Communicative language teaching (CLT) pedagogy provides solid support for learning a language through the communications that surface in the performance of various pragmatic tasks.   This study tried to implement a non-traditional or communicative reading pedagogy by combining the essence of the communicative pedagogy and strategic reading instruction with the semantic mapping to assist students to read communicatively and purposefully. Specifically, the effects of this new pedagogy on students' reading comprehension and metacognitive strategy use were investigated.

This research cross-examined the effect of incorporating, semantic mapping, and reading strategy instruction into communicative reading to promote student's reading competence, and with the expectation that their writing skill can also be enhanced. The effect of PA based vocabulary training will also be investigated. And as a cooperation between academic and the commerce, the textbook will also be evaluated for future improvement.

Theoretical Foundation

Vocabulary is important to Readability (Chall, 1958; Klare, 1974-1975;) and academic achievement (Saville-Troike, 1984). Words are one of the core elements for learners (Akmajian, Demers, & Harnish, 1986). Expanding students' vocabulary inventory is the foundation for training reading.

The first step to memorize a word is to know the letter sound correspondence. Wagstaff (1997) stress the importance of applying growing knowledge of letter-sound correspondences in meaningful reading and writing context. This implies an induction from a constructivist view. When learners see enough words, they should be able to compare, contrast, and find analogy between words, which in Templeton & Morris's term (1999) is to derive the spelling of an unknown word by known words. Therefore, the analogy between letter patterns and sounds can be categorized and used to guess unknown words. The letter patterns and sound correspondence can be seen in different parts of a word. For example, the prefix, affix and suffix can all be put in this category.

Words can be arranged somehow to help memorization (Cofer, Bruce, and Reicher, 1996; Craik and Tulving, 1975). Carroll (1999) claimed that words are stored in the forms of shape, sound, and meaning in permanent memory. Grouping helps to memorize words (Norbert Schmitt, 1997). Word sorting is claimed to be an efficient way to promote the development of orthographic knowledge (Bear, Invernizzi,

Templeton, & Johnson, 2004; Bear & Templeton, 1998). Grouping can be done in many ways. Letter-sound correspondence can be used as one of the grouping arguments. And word sorting can be perceived as grouping with the argument of meaning.

Meaning facilitates more cues to organize words. The synonym and antonym are the obvious examples used to categorize words. The connection, relation, and sequence can all be used to group words together. The point is somehow to find a linkage between words to organize them so that one word can lead to another or even words. Semantic map can be a good tool to organize words with a central word according to their meaning (Holden, 1999). It can be used to help students memorize new words.

The word memorization training should include the following processes:
1. Learn the linkage between letters and pronunciations.
2. Group words with similar letter sound correspondence.
3. Use the letters sound correspondence as a hint to guess new words
4. Use meaning as a linkage to organize words into groups.
5. Use semantic map to group words with different arguments to strengthen learning.

The Communicative Reading Pedagogy

Three models, labeled bottom-up, top-down, and interactive characterize the interpretation of the processes involved in reading (Anderson, 1999). Traditional reading instruction puts emphasis on analyzing the vocabulary words and sentence patterns, which according to Segalowitz, Poulsen and Komoda (1991), stresses the linguistic knowledge, and the semantic, lexical, and phonological knowledge to form the basis for understanding the text and is an example of the bottom-up process. Language learning is converted to rote memorization of words and grammatical rules. Language teaching simply becomes a tool for translation, which, as some students claim, can easily be replicated with an electronic dictionary. As a result, learning may become boring and discouraging for a number of students.

The top-down model represents a more strategic processing, a much higher level of processing in comprehending the text (Segalowitz, Poulsen & Komoda, 1991). Readers use syntactic and semantic cues and accommodate other reading strategies to ensure an accurate comprehension of the text. The top-down model of reading is more strategy-oriented, with the assumption that the reader's basic competency in the target language has been fulfilled.   However, this is often not the case with the EFL (English as Foreign Language) learners (Nagao, 2002).

As the currently most widely accepted model, the interactive model stresses the entire reading process and centers the learning process on interaction. Grabe (1991) made readers aware that two interactions coexist during the reading process; one is the

interaction between reader and text and the other between the reader's bottom-up and top-down models.

Through strategic use of top-down and bottom-up models in the interactive model, the deficiency in linguistic knowledge can be compensated with skills used in the top-down model, which then enhance one's lower-level processing capability for further inference in the top-down model. The author's idea presented in the text must be fitted into the reader's potential for understanding in order for it to be comprehended. The reader's prior knowledge must interact with the text to produce a new schema for processing the new knowledge. Therefore, the interactive model can describe an effective reading process.

The interactive model focuses on the importance of incorporating the reader's linguistic knowledge and background knowledge of the world with reading strategies and intention or purpose to understand what the author said in the text. Fillmore (1981) stated that ideal readers "see connection, create expectation, perform inference, and ask the question" (p. 252). Good readers use reading strategies to deduce, evaluate, and integrate the information provided in the text and link it with their prior knowledge and experience it to make the idea and concept meaningful.

How can reading be communicative? Real communication is a bilateral exchange of information. The interlocutor on each side of the discourse should be able to ask questions and give answers. To make reading communicative, readers should ask what they want to know and seek answers from the author (i.e., not only answers to their questions but which book will give them the answers they seek).

Both the top-down and interactive reading strategies can help one find the answer in the book, if it is the right book to provide the answer the reader seeks. Reading strategies help students correctly receive the information. But such strategies still produce a passive reception of knowledge; readers only passively accept the information.

Real communication starts from what the readers really want to know, not what writers intend to tell. Real communication involves an active pursuit for any information desired. Communicative reading is reading with a purpose to get an answer or to accomplish a goal. Reading must be a reader self-initiated activity to become communicative reading. Because it is self-initiated, the motivation to learn can often be stronger. The researchers suggest that only when readers have a strong motivation to learn will reading strategy become meaningful (Van Lier, 1996).

In this researcher's perspective, a communicative reading pedagogy should include the following features: (a) reading with a purpose to communicate with the author (Knutson, 1998), (b) reading communicatively to examine the text, (c) reading strategically to ensure understanding of written words (Anderson, 1999), and (d)

reading to apply the knowledge for interaction (Nunan, 1999).

Reading with a Purpose to Communicate with the Author

To read with a purpose is to search for something in the text that is of personal interest for the reader (Knutson, 1998). As the readers engage the story, they are developing questions they would desire to ask of the writer. Since writers reveal everything they intend to, readers do not have to follow the exact sequence of the text to collect the answers. That is, readers can skim through the material in order to gain a brief idea of what the author intends to say and to answer any questions that might have arisen from the reading of the text.

Students should be trained to read with a purpose—to explore the main idea and the conclusion. They should be encouraged to go deeper, seeking to obtain more meaning from the text. Newman (1985) stated that learning occurs when learners actively induce meaning and correlate language with experience. Wittrock (1983) reported an improvement in reading comprehension when students wrote about their experience as they related to information provided in the text.

According to the schema theory, a reader's past knowledge and experience represents the content schema; comprehension will be better if a reader's content schema relates to the topic in the text (James, 1987). That is, individuals must understand the topic, the social context involved, and the author's attitude in order to integrate content of the text with their prior knowledge and experiences (Kauchak & Eggen, 1998). The top-down processing relies on reader's content schema to become functional (James, 1987). When individuals can link the material being read with their lives, the text may become easier to understand. This connection can also offer opportunities to compare, discuss, infer, and evaluate the material of focus.

Since schema is so vital to the comprehension of a written text, reading with a purpose also implies searching for reference or background knowledge to strengthen one's content schema for better understanding of the topic in the text. Semantic mapping affords an opportunity to apply one's schema in organizing the information for comparison, inference, and evaluation.

Reading Communicatively to Examine the Text

The writing styles generally found in a textbook can be classified into four types: (a) narrative, (b) descriptive, (c) persuasive, and (d) expository (Johnson, 1994). Each type has its own way of developing a paragraph. The genre type of the paragraph, in a communicative sense, represents the style the writer used to carry on his conversation. Paragraphs form the basis of an article. Learning how a paragraph is organized will help students understand the information presented in the text (Carrell, 1985).

Fragmented information often cannot support a discussion. The relationship between words and phrases integrates ideas and concepts. Since reading and writing are

interactive processes, learning how authors organize the text and expand on the main ideas will enhance both reading and writing competence. Student must have the competence to organize information effectively in order to generate ideas more fully. Semantic mapping instruction can be used to help students grasp the framework and outlines of writing. Hence it was demonstrated to be effective for teaching reading and writing (Grabe & Kaplan, 1996).

For communicative purposes, students must practice conveying their own ideas. Familiarity with paragraph organization is indispensable in grasping details strategically and developing communicative competence in applying knowledge. Reading instruction must facilitate by supplying the tools, and building the skills, such as a semantic mapping technique, to help students organize their ideas learned from the text into appropriate words.

Reading Strategically to Ensure Understanding

Smith (2002) recommended five thinking strategies for good readers: (a) making predictions, (b) forming images, (c) drawing connections, (d) monitoring understanding, and (5) abridging the gaps in understanding.

Comprehending the content of the text is like listening to the words of the writer. Readers use their prior knowledge and experience about the context to guess what the writer might be talking about—a person forms images in his/her mind and draws connections between the concepts discussed. This is a process used to relate the author's ideas to one's own ideas for better comprehension (Hayes & Tierney, 1982), an application of the cognitive strategy of making predictions (Anderson, 1999). When readers have more knowledge or experiences in common with the writer, like two intimate friends do, they can better predict what might be presented in the text.

As listeners to the writer, readers can verbally repeat the words, or picture the events or situations to make sure correct information has been transferred. Think aloud strategy can be used to examine one's understanding of the text (Israel & Massey, 2005).

During a conversation, listeners need to organize the facts the speaker articulates to perceive his or her intention. This requires listeners to see connections between the facts by activating their prior knowledge, which may include contextual or semantic clues and anything that will lead to a better understanding of the text, in order to integrate and organize their relationship with the author or speaker. Readers need to find connections if they are to grasp the meaning.

When listeners find contradiction or inconsistency in dialogues, they first need to monitor their interpretations to make sure correct information is being extracted. Should there be any doubt, they might ask the speaker to speak slower or repeat the dialogues (e.g., read slower, or reread the text), which in the case of reading, just as Anderson

(1999) stressed, is to verify their reading strategies to ensure normal communication or correct interpretation.

Reading to Apply the Knowledge for Interaction

The final goal of learning is to apply knowledge in real life situations. Brown (1994) listed activities generally found in a communicative class to include group work, pragmatic interaction in real social context, and practical language input. Communicative reading instruction does provide opportunities to interact with other learners (group work) in simulated social real-life contexts, utilizing practical interactive language exercises. That is, students in the same group exchange the information learned from the text, make comments, create summaries, and pose questions.

Research has demonstrated that a collaborative process between learners can generate better performances in terms of learning outcomes (Brooks 1992; Donato 1994; Ohta 1995). This collaborative process is also called scaffolding (Bruner 1975; Cazden 1988). Scaffolding refers to the assistance given to others through learner to learner interaction. According to the theory of zone of proximal development (ZPD), learning will not be facilitated if the assistance given and the task being performed are not appropriate. Timely assistance or aid and the selection of suitable texts will often support the learning process in terms of the reading comprehension that occurs within groups.

Lightbown and Spada (1990), Lyster and Ranta (1997), as well as Doughty and Williams (1998) claimed that interaction affords an opportunity to use the language being learned and attend to the linguistic forms. Swain (1995) pointed out that language output demands more mental processes than language input and also increases learning. Interactions within the group construct a ZPD for mutual learning as well as provide an opportunity to negotiate meaning in the text and to practice the linguistic forms, thus forming an appropriate reflection on the reading process. Reading must end only after students have performed some communicative group tasks.

Research Questions

The research questions for this study are as follows:

1. Does the integrated CRI instruction have an impact on a student's reading comprehension level?

2. Does the integrated CRI instruction affect a student's metacognitive strategy use?

3. Does the PA based vocabulary training have an impact on the size of a student's vocabulary inventory?

Hypotheses

The two general research questions above generated the following two research hypotheses:

1. The CRI-based integrated strategy and semantic mapping (integrated CRI) reading instruction will enhance students' reading comprehension levels.
2. The CRI-based integrated strategy and semantic mapping reading instruction (integrated CRI) will increase students' metacognitive strategy use.
3. The PA based vocabulary training will increase the size of a student's vocabulary inventory?

Definition of Terms

Communicative Competence

Communicative competence refers to the ability to use language effectively for communication purposes. Gaining such competence involves acquiring both sociolinguistic and linguistic knowledge.

EFL

EFL is an acronym for English as a Foreign Language. It refers to the teaching or learning of English in non-English speaking countries.

GEPT

The Taiwan Ministry of Education commissioned the Language Training & Testing Center (LTTC) to develop a fair and reliable English test, called the General English Proficiency Test (GEPT), for English language learners at all levels of proficiency. The test is administered in five levels. Each level of the test is administered in two stages. Examinees must pass the first stage before proceeding to the second. The items and content design for each level is based on specific level criteria.

Language Acquisition

Krashen (1982) stated that language acquisition is contrasted with language learning; it is unconscious and spontaneous.   Language learning, on the other hand, is conscious and developed through formal study.

Metacognitive Strategy

Cognitive and metacognitive strategies are the two most often used reading strategies. Metacognitive strategies are defined as "thinking about thinking" (Anderson, 2002, p. 82). That is, a person uses a system of cognitive strategies to ensure better comprehension (Devine, 1993; Flavell, 1981). It is the product of constant reflection and evaluation of one's thinking processes (Anderson, 2002)

The Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002) measured the metacognitive reading strategies use of L2 readers in the content of

reading academic materials. The SORS investigated three kinds of reading strategies: global reading strategies (13 items), problem-solving strategies (8 items), and support reading strategies (9 items). This survey was used in this study to investigate students' use of metacognitive reading strategy. Although Mokhtari and Sheorey never reported the reliability for the SORS, another researcher, Anderson (2004), has examined the reliability of the instrument.

CHAPTER 2

Review of the Literature

Introduction

This chapter reviews the research literature on traditional reading instruction (traditional grammar translation instruction), non-traditional reading instruction (communicative reading instruction), reading strategies, semantic mapping, and reading theory.

Traditional Reading Instruction

The traditional grammar translation method has dominated language classes in Taiwan for decades. In this method, the teacher is often seen as a presenter of knowledge rather than a facilitator (Warden & Lin, 2000). In order to enter a prestigious school, students must confront fierce competition. For the purpose of preparing students for the entrance examination, the teaching pedagogy in Taiwan remains teacher-centered and examination-oriented.

As a result, the nature of English teaching and learning is characterized as exam-driven. A concern for many educators is that lower achieving students are often neglected when placed in a mixed-ability class. By many students, English is merely considered another subject to be tested, and the importance of language as a communication tool has often been ignored. It has been an historical issue that Taiwanese students lack communicative competence in spite of their good performance on grammatical accuracy (Li, 2000). Most participants (EFL teachers) reported that grammar-translation methods and audio-lingual methods, or a combination of the two, characterized their teaching. Many non-native English teachers lacked confidence in oral English and sociolinguistic competence. This incompetence often drives them to choose the teacher-fronted grammar teaching pedagogy. In addition, the low language proficiency, low learning motivation, and passive learning attitude of students discourages teachers from using more innovative and inventive teaching methods. Another important issue is the insufficient financial support for teaching resources from the school or government. Due to the massive amount of paper-pencil examinations to be graded for the large classes (an average of 40-50 students), most teachers are very occupied by their routine work and it becomes extremely difficult for them to even consider making changes from the traditional teaching pedagogy.

Much of the criticism about the use of translation in foreign language teaching has focused on the problem of interference between the two languages and not enough focus on critical thinking exercises in the foreign language (Leo Chan, 2000). Malmkjaer (1998) and James (1989) asserted that the arguments against the use of the translation method include these:

1. It gives a misconception that individuals can always find words or phrases that

will describe exactly the same semantic meaning between the two languages.

2. It undermines the function of communication and misinterprets how language acquisition is developed.

3. It requires competence in both languages, which seems to switch the role of translation in the learning process from a goal to a prerequisite.

Recent research on teaching pedagogy supports translation as a sound method in teaching a foreign language. For example, Scherer and Wertheimer (1964) at the University of Colorado did an experiment with two groups of foreign language learners, one taught in the traditional (grammar-translation) method, and the other in the audiolingual method. After a four-semester experiment, there was no substantial difference between the achievements of the two groups, except that "the audiolingual group was superior in the 'active' skill of speaking, and the traditional group in writing" (Hendrickx, 1972, p. 18).

Grammar Translation Approach

Grammar-translation methods were strongly entrenched in the Taiwan educational system from the 1840's to 1950's. A typical grammar-translation lesson began with a reading of the text, followed by the introduction of new words and an analysis of the sentence structure, and was completed with translation of the content of the text, sentence by sentence, and paragraph by paragraph from the target language to the first language (L1). The grammatical rules were to be memorized and practiced with translation exercises.

Translation remains the typical second language instruction and learning assessment method in Taiwan (Hsieh, 2000). The goal of grammar-translation instruction is to teach students to read and write in the target language. The teacher's role is to focus on translating exercises instead of interactively communicating in the target language. Proficiency in communication was not the main purpose of teaching the target language (Brown, 1994; Larsen-Freeman, 1986; Richard-Amato, 1996; Richard & Rodgers, 1986). As a result, this approach does not encourage students to communicate meaningfully or interactively in the target language (Chen, 2000).

Audiolingual Approach

The audiolingual approach was based on the theory of behaviorism. Since the 1960s, language learning has been influenced by this psychological force, more specifically, behavioral modification techniques, such as reinforcement (practice), repetition, and shaping were considered essential for learners to procure the target language. Learning of grammatical rules is expected to sprout from constant practice and error-corrections. The language performance was deemed successful as a result of forming the habit of using language structures and sentence patterns (Celce-Murcia, 1991).The emphasis is laid on the sentence structures. The meaning and contextual

information is, unfortunately, not often addressed (Hung & Zhang, 2002).

Communicative Language Teaching (CLT)

In view of the deficiency of the traditional grammar-translation approach in cultivating the communicative competence, around 1970, an innovative approach called the communicative language teaching (CLT) approach, was proposed to address the problem. Krashen and Terrel (1988) claimed that minor grammatical errors should be tolerated in achieving language communication competency. A main theoretical concept in CLT is that language teaching should include contextual and social information, and language practice should go beyond grammar to stress the importance of discourse competence (Nunan, 1998).

According to psycholinguistic theory, effective learning will come from an intention to understand instead of an exclusive concentration on grammar-related accuracy (Corder, 1978b). In this theory it is felt that learning with an intention to communicate will excite the best performance. The communicative approach emphasizes communicative competence. It stresses a language learning that must go beyond memorizing linguistic forms and escalate into usage in real life situations. As a result, the communicative approach may be a better approach to teach a second language.

Canale (1983) stated that communicative competence should include (a) "grammatical competence, (b) sociolinguistic competence, (c) discourse competence, and (d) strategic competence" (p. 18). Beale (2002) adds that grammatical competence ensures that the language patterns used are interpretable or in correct forms. Discourse competence enables one to organize and convert meaning and intention into sentences. Sociolinguistic competence stresses the appropriateness of language usage to suit the particular social occasion. Strategic competence can smooth the communication, accomplish bilateral information exchange, and make one's attitudes and intentions clear to others.

Constructivist View of Reading

A constructivist view of the reading process is that reading is a reconstruction of mental images based on the information from the text (Anderson & Pearson, 1988; Lee, 1990, Smith, 1995). Reading allows a person an opportunity to combine his or her prior knowledge with what the author said (Maaroef, 1995). Meaning does not come from the text itself. Text has meaning potential, but its real meaning varies from person to person. Readers determine the meaning by integrating the knowledge into their schemata in the way most suitable to them, depending on prior knowledge and purpose (Widdowson, 1984).

Besides the constructive nature of reading, Anderson, Hiebert, Scott, and Wilkerson (1985) stressed the importance of complex skills required to coordinate

different information to construct meaning. Semantic mapping contributes to training the ability to organize pieces of information from the text. Grabe (1991) further pointed out the interactive nature of reading that integrates prior knowledge, the context, and the written text presented by the author is important. Strategy training helps learners collect and analyze information, whereas Semantic mapping contributes to training the ability to organize pieces of information from the text for better comprehension.

In correspondence to the nature and skills in the reading process, researchers had categorized the reading processes with three models: bottom-up, top-down, and interactive (Goodman, 1973; Gough, 1985; Stanovich, 1980).

Bottom-up model. The bottom-up model corresponds to the fundamental linguistic skills from recognizing the phonological and semantic features of letters and words to the syntactical rules of sentences (Carrell, 1988b). Bottom-up approaches emphasize the skills required to decode the words and interpret sentences for meaning as they are presented in the text. Readers are expected to understand letters and words, their grapheme-phoneme correspondence, the association of forms to their semantic meaning, and analyze the combination of words into different sentence patterns with different tenses to extract the facial meaning presented in the written text (Segalowitz, Poulsen, & Komoda, 1991). In this sense, reading becomes merely mapping the linguistic knowledge in the text with one's language inventory for meaning. The problem is that this completely ignores the importance of a reader's perspective and the cultural and contextual information required for inducing the meaning. It implies that readers with equal level of language proficiency will derive the same meaning from the text.

Top-down model. The top-down model incorporates the reader's perspective and his/her prior knowledge in extracting meaning from the text. Reading is not a passive transference of messages into one's knowledge inventory, but an active engagement in interpreting meaning by making use of strategy to clear up any ambiguities and ensure correct comprehension, integrating prior knowledge to enhance understanding, and selectively collecting information to meet one's current demands (Segalowitz et al., 1991).

Readers take control of the information transfusion and discriminate the message to determine what they receive. Readers no longer rely wholly on linguistic knowledge to comprehend the text as in the bottom-up model. In addition, readers have incorporated syntactical information, prior knowledge, and their personal strategies in comprehending the text. To the reader, the knowledge of the content of the text is more important than the linguistic knowledge of the text, and one's prior knowledge related to the text contributes more to the meaning of the text than the meaning that emerges from the text in and of itself.

Interactive model. The interactive model better describes the reading process and

finds a wide acceptance (Anderson, 1999). Grabe (1991) stresses that two interactions work together to enhance comprehension; one is the interaction between reader and text, and the other is the interaction between bottom-up and top-down processes. Both language competency and prior knowledge about the content of the text contribute to comprehension in the interactive process (Milkulecky, 1990). What is more important is that bottom-up and top-down processes will compensate for the deficiency in each other and enhance comprehension (Stanovich, 1980). Good readers constantly switch between the two modes of processing, the bottom-up decoding and top-down interpreting (Anderson, 1999).

The interactive model stresses the importance of both linguistic and prior knowledge as well as strategic use of this knowledge by incorporating it with contextual and syntactical knowledge to enhance comprehension. Reading needs to integrate different skills and knowledge, and the process itself demands strategy. It is not a simple process (Anderson, 1999). In short, reading is a purposeful, interactive, strategic process, in which readers induce meaning from the text based on their linguistic, syntactical, and contextual knowledge.

Reading Strategy

Palincsar and Brown (1984) conducted an experiment called "reciprocal teaching," which is to teach students four reading strategies, with the result revealing that learning strategy does improve reading competence. Carrell et al. (1989) trained L2 students to use both metacognitive and cognitive strategies as well as incorporate semantic or experience-text relationships. By the conclusion of the experiment, students' reading comprehension made significant improvement. Cotterall (1990) studied the effects of metacognitive strategy and found that strategy instruction enhances a student's reading comprehension. Similar research done by Song (1998) as well as Auerbach and Paxton (1997) also reach the same conclusion that strategy teaching improves students' reading competence. Nunan (1999) claims that learners who are more adaptive in using their learning strategies make better progress in their learning. Unfortunately, many EFL students do not realize the advantages of using strategies to accelerate one's learning.

Learning strategies are defined as "specific actions, behaviors, steps, or techniques—such as seeking out conversation partners or giving oneself encouragement to tackle a difficult language task—used by students to enhance their own learning" (Scarcella & Oxford, 1992, p. 63). The definition of strategy by different researchers is diversified. All the following terms: "learning behaviors, cognitive process, problem-solving activities, and thinking skills are considered as strategy. There is no agreed-upon taxonomy for strategy" (Anderson, 2004, p. 4).

Anderson (2004) defined strategy as the conscious effort that the learners use to enhance their learning. Strategy is not an individual action, but it is an orchestration of

many actions. Strategy represents a learner's active participation in their learning process. It can be observable or mental. Any efforts learners use to improve their learning are classified as a strategy. Using strategies to improve one's reading is strategic reading (Anderson 2004). Good strategy fits one's learning style, suits the task, and orchestrates with other strategies in achieving learning goals (Oxfords, 1990).

Oxford (1990) classified six major groups of EFL learning strategies: "cognitive strategies, metacognitive strategies, memory-related strategies, compensatory strategies, affective strategies, and social strategies" (p.37). Memory related strategies help one to remember and retrieve information by linking sound, image, body movement, or any other media with the concept or language items but does not necessarily enhance understanding. Compensatory strategies are used to compensate for the lost message through guessing or deducing from any available hints within the context. Affective strategies help one to maintain a good spirit or attitude toward learning. Acknowledging one's effort and rewarding one's learning are typical affective strategies. Social strategies enable one to use social resources to solve problems. Asking questions and seeking help from more knowledgeable learners are possible strategies that one can use (Dreyer & Oxford, 1996).

Cognitive and metacognitive strategies are the two most often used reading strategies. Metacognitive strategies are defined as "thinking about thinking" (Anderson, 2002, p. 82). That is, a person uses a system of cognitive strategies to ensure better comprehension (Devine, 1993; Flavell, 1981). It is the product of constant reflection and evaluation of one's thinking processes (Anderson, 2002). Metacognitive strategies make for a better reading process, are timely and effective strategy, which coordinates different strategies, monitors the outcome, evaluates and makes correction for strategy use (Anderson, 2002). Metacognitive strategies are not implemented sequentially. Rather, they intertwine and constantly evolve to search for better results.

Semantic mapping and Reading

Researches have found that knowledge of the text-structure improves reading comprehension (Armbruster, Anderson, & Ostertag, 1987; Raphael & Kirschner, 1985; Taylor & Beach, 1984). Semantic maps provide a visual graph to help sequence and organize the text. Semantic mapping can be used in prereading to get a broad idea or the structure of the text, and the details can be added after postreading so the content and context can be completely grasped. The whole process helps readers to align their prior knowledge for better understanding, and consume the knowledge for better retention. Therefore, semantic mapping contributes to both comprehension and retention (Kuo, 2003; Sturm & Rankin-Erickson, 2002).

The above research seems to recommend that reading instruction should include the training in applying prior knowledge, identifying text-structure in order to improve

reading competence. Semantic mapping technique can be applied with strategy instruction to organize the main ideas, seek relations between paragraphs, draw conclusions, and even to find the implication within the text.

Strategy training helps readers exploit meaning from the text. Semantic mapping structuralized the scattering main ideas into an integrated organism, so the whole text becomes vivid and crystal clear. Therefore, strategy training integrated with semantic mapping can become a good reading instruction.

The Integrated CRI Reading Instruction

The preparation phase. This phase introduces the cognitive and metacognitive strategies generally used by readers. To start, a teacher should conduct a group discussion on strategies that should be used by the students. Secondly, he/she should teach the paragraph development process which is generally applied in constructing an essay by giving examples and guiding students to practice these techniques. Thirdly, he/she should instruct students to pre-read and skim to identify the main idea, the topic sentences and genre, and find any new vocabulary or sentence patterns. Finally he/she should explain new words and sentence structures to students to facilitate comprehension of the text. A rough draft of the idea map to show the title of the text and main ideas of each paragraph must be created.

Reading execution phase. Group brainstorming is used to form different perspectives and relate one's prior knowledge to the topic. Cognitive instruction and metacognitive instruction are used to correctly retrieve information from the author's writing. The author's opinion or idea is written down and attached to a reader's own opinion for comparison and contrast. Cognitive and metacognitive strategies must be applied all the way through the reading process. In the end, readers construct an essay of their own with the author's opinion to support and contrast their own ideas. At this moment, reading communicatively or interacting and communicating with the author are completed.

Semantic mapping phase. Readers add details to elements of the map, examine the accuracy of each main idea, check the cohesion, and draw conclusion to the whole text. The complete text becomes clear and the presentation of the ideas are tied together

Communicative reading phase. In the final step of the reading strategy instruction, the reader is ready to represent the author and present ideas with the author in the background with themselves in the foreground. The reader is prepared to afford the communicative reading task for the group. For all the other group members, this is a reading task with the author coming in person to explain the text and answer any questions. To the reader, this is an opportunity to cross examine for comprehension, evaluate the strategy usage, initiate deeper processing of the text, and communicate personally with the content learned from the text. The reading becomes a

communicative task that requires the student to interact with people instead of an interaction with just a text.

CHAPTER 3

Research Methodology

Introduction

This research will investigate the influence of the integrated CRI reading instruction on reading comprehension and metacognitive strategy use. In addition, the students' vocabulary inventory after receiving PA based vocabulary memorization training was also investigated.

Two classes of students, forty students each, participated in this experiment and were assigned to different groups. The experimental group was instructed with integrated CRI, and the control group was given TRI (traditional reading instruction). The experimental group was divided into smaller groups to perform communicative tasks, whereas the control group was taught with teacher lecture to the class as a whole. In the beginning both groups received vocabulary memorization training fro two weeks. The instruction was conducted for twelve weeks, at three hours per week.

The research is a quasi-experimental design, which includes pretest-posttest of vocabulary, reading comprehension and metacognitive strategy use. The vocabulary test used the materials from textbooks. The pretest and posttest of reading comprehension utilized the materials from the General English Proficiency Test (GEPT) administered by the Language Training and Testing Center (LTTC), a government-consigned institution. Pretest and posttest on the metacognitive strategy use utilized the survey of reading strategies (SORS).

Participants

In this experiment, two instructional styles were utilized (integrated CRI and TRI). This experiment was implemented during a twelve-week session, twice a week for three hours per week and each time consisted of fifty minutes of instruction.

The subjects in the experimental group were further classified into three language competency levels according to their reading comprehension pretest score and randomly assigned one from each level into groups.

Instruments

The Reading Comprehension Test

In 1999, the Ministry of Education commissioned the Language Training & Testing Center (LTTC) to administer official English proficiency tests and set up standards for different proficiency levels for the public to promote lifelong language learning. The General English Proficiency Test (GEPT) developed by LTTC contains five levels: elementary, intermediate, high-intermediate, advanced, and superior. Each level of the tests is administered in two stages. The examinee must pass the first stage before proceeding to the second, and whoever passes both stages will be awarded a certificate

of achievement.

The reading comprehension test for this research was retrieved from the reading comprehension proficiency test of the elementary-intermediate level of GEPT. This test was a criterion-referenced test and each level had a specific proficiency standard. The reading test is a traditional linear test. The examinee can always go back to correct an answer or skip any question. The subjects of experimental and control groups were asked to take the pretest and posttest reading comprehension tests (see Appendix). The time was limited to forty minutes. GEPT's concurrent validity report performed by LTTC confirmed the validity of its test materials and the results showed that the correlation coefficient with the CBT (computer-based testing) and TOEFL in the reading comprehension part was 0.65 with a significance level of 0.001.

Questionnaire for Reading Strategies Use

The Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002), was one of the main instruments for this research. The SORS emphasized the measure on the metacognitive reading strategies use of L2 readers in the content of reading academic materials. Mokhtari designed the SORS for university students, both native and nonnative English speakers. The SORS investigated three kinds of reading strategies: global reading strategies (13 items), problem-solving strategies (8 items), and support reading strategies (9 items). Mokhtari and Sheorey never reported the reliability for the SORS. However, another researcher, Anderson (2004) examined the reliability of the instrument.

Anderson (2004) calculated the Cronbach's alpha coefficients for the total SORS as well as its three subscales: Global Reading Strategies, Problem-Solving Strategies, and Support Reading Strategies. Coefficients ranged from .64 to .85. The Cronbach's alpha for the overall SORS in English reading strategies was .85. The reported reliability for each subsection was Global Reading Strategies, .74; Problem-Solving Strategies, .64; and Support Reading Strategies, .67. These data helped to establish that the SORS is a reliable instrument for assessing the metacognitive reading strategies of L2 readers (p. 10).

The purpose of this survey was to collect and measure information about students' various reading strategies. This research was based on a Likert 5-point scale format ranging from a "1" which means "I never or almost never do this" to a "5" which means "I always or almost always do this". The subjects of experimental and control groups were asked to take the pretest and the posttest of SORS, and they were instructed to respond to the thirty items on the SORS about their strategies of related school and academic reading materials in English. The testing times were limited to fifteen minutes.

Teaching Materials

Two books, the textbook and the workbook, were used for both the experimental and control groups. The book, *Active Skills for Reading: Book 2,* written by Neil J. Anderson, was used as the main textbook. The book, *Comprehension Skills level B,* written by Beech, McCarthy, and Townsend was used as workbook for practicing and evaluating reading strategies. The experimental group used one more book, *Paragraph Development,* written by Arnaudet and Barrett. This book was used as a reference book for teaching students in the experimental group how to identify the main points and supporting facts structure and the enumeration of a paragraph.

The textbook and the workbook were selected for the following reasons: (a) the level of difficulty matched student's English proficiency, (b) the topic of the content material was interesting and suitable for developing communicative tasks, and (c) the book was designed to teach reading strategies. The sequence of the lesson did not follow the sequence in the book. Instead, it was ordered according to the goals of the lesson and both the experimental and control groups were taught with the same pace and lesson but with different class activities. The control group spent more time in grammar, translation, and drills, whereas the experimental group concentrated on practicing reading strategies and performing communicative tasks.

Basically the design of the lesson supported the ability to comprehend the written text. Students had enough linguistic knowledge, knew enough words and sentence patterns, and they also needed to learn reading strategy to become more skillful readers. Both experimental and control groups were taught how to memorize new words and sentence patterns generally used in the reading for the low and intermediate level readers**,** and both were also given strategy instruction.

For the control group, the grammar was taught with traditional reading instruction**,** and the purpose of the grammar instruction was to identify and understand the meaning of the correct sentence patterns. For the experimental group**,** grammar was taught with communicative instruction. Here the purpose was to prepare students to take the role of the writer and facilitate the capability to communicate with sentence patterns.

For the control group, the lesson plans consisted of three major parts: how to memorize the new words, grammar instruction, and strategy training. Besides training in these three areas, the experimental group also received instruction on how to construct a paragraph, create a semantic map, and practice playing the role of the writer. The materials covered for both groups were the same except that the experimental group received extra instruction on constructing a paragraph.   In addition, the grammar instruction was taught communicatively**,** and students also engaged in activities to play the role of the writer. While the experimental group was practicing playing the writer**,**

the control group was taught the same material but with the traditional translation methods.

Research Procedures

A vocabulary pretest was administered to all the students before the regular class began and the posttest was given after two week's memorization training. At third week, a pretest on the reading comprehension and another pretest on metacognitive strategy use were administered to all the students before the regular reading class began. During the first week of the reading class, both groups were given formal reading strategy instructions and the sentence patterns needed to comprehend the text. The experimental group was taught with the integrated CRI approach and the control group with the TRI approach. The same instructor taught both groups.

At the beginning of each lesson, students were required to skim through the text; the instructor taught both groups the new words and sentence patterns but with different approachs. The control group focused on the text with each sentence translated into L1 language, Chinese, for comprehension, whereas the experimental group spent more time practicing reading strategies, discussing the topic in the text, and performing communicative tasks. The experimental group was taught the enumeration of the text and the semantic mapping technique. For the experimental group, the comprehension was more self-directed and autonomous; the teacher's role was to guide and monitor the process and to make sure that the interactions within the subgroups went smoothly.

The experimental group was further divided into subgroups. After reading using reading strategies and completing their learning by drawing a group semantic map members in each subgroup took turns replacing the author to present and discuss the text with the other members of their group. The student who represented the author hosted the brainstorming, wrote down the perspectives of other members, and introduced what they learned with their own opinion using a semantic map to assist with comprehension. The communicative tasks were initiated by the student actor (writer) who interacted with the other members to comprehend the text and discuss each of their perspectives on the topic. At the end of the class, one member from each group shared the group conclusions with the whole class. To enable the students to carry on the discussion, the teacher facilitated sentence pattern construction for students to refer to and imitate and intervened to give instruction or translation whenever students had trouble communicating.

After the twelve-week experimental instruction period, students from both groups were given a posttest on the reading comprehension and another posttest on their metacognitive strategy use.

Variables and Data Analysis

First, the hypothesis was examined to see if the vocabulary memorization training

improve the student's vocabulary inventory. The vocabulary memorization was the independent variables; vocabulary pretest and posttest scores were the dependent variables. A t-test was used to analyze the difference in the vocabulary pretest and posttest scores.

Second, the hypothesis was examined to see if the integrated CRI would improve the student's reading comprehension. The integrated CRI and traditional instruction were the independent variables; pretest and posttest of reading comprehension scores were the dependent variables. ANCOVA was used to analyze the difference in the pretest and posttest reading comprehension scores.

Third, the hypothesis was tested to see if the integrated CRI instruction would enhance the student's metacognitive strategy use. The integrated CRI and traditional instruction were the independent variables, and pretest and posttest metacognitive strategy use scores were the dependent variables. The difference in the pretest and posttest metacognitive strategy use scores was analyzed with ANCOVA.

CHAPTER 4

Results of the Analysis of Data

Introduction

This study investigated the effects of the integrated CRI reading instruction on student's reading comprehension and reading strategy use. As a preliminary process, the vocabulary memorization instruction was given to both groups and the result of this instruction was examined. The overall reading strategy was subdivided into three components: global reading, problem solving, and support reading strategies. Please note that the term reading strategy represented the overall reading strategy used by the student.

In the beginning of the 12-week experiment, two classes, each with 40 students were assigned to be the experimental and control groups. One student from each group dropped out; consequently the number of participants for both groups is 39.

The results presented in this chapter consisted of three parts. In the first part, data collected from the vocabulary pretest and posttest was used to examine the hypothesis that vocabulary memorization training can improve students' vocabulary inventory. In the second part, data collected from the pretests and the posttests of reading comprehension and strategy were used to examine the hypothesis that the integrated CRI reading instruction improved students' reading comprehension and reading strategy use. And finally, data collected from the students' opinions about the textbook used for this project is evaluated.

Research Findings on the Effect of the Integrated CRI

Two hypotheses were formulated to evaluate the effect of the integrated CRI reading instruction on students' reading comprehension and strategy use and one hypothesis to evaluate the effect of PA based vocabulary training:

Hypothesis 1: Integrated CRI instruction has an impact on students' reading comprehension levels.

Hypothesis 2: Integrated CRI instruction will also produce a positive impact upon students' reading strategy use.

Hypothesis 3: PA based vocabulary training has an impact on the size of a student's vocabulary inventory?

Both hypotheses one and two were examined with an analysis of covariance (ANCOVA), and a comparison of the effects of integrated CRI and TRI on the reading comprehension and strategy use was made. T test will be used to examine the effect of PA based vocabulary training.

Effect of Vocabulary memorization instruction on Student's vocabulary inventory

The differences between vocabulary pretest and posttest scores were analyzed with the analysis of t test for both control (the translation group) and experimental (the integrated CRI instruction) groups. The total score of the vocabulary test is 100. Both showed significant differences with t = -4.10, p<0.001 for the control group and t = -3.04, p<0.01 for the experimental group. As shown in table 1, both groups showed increases in their vocabulary test scores, from a pretest score of mean 53.46 to a posttest score of mean 62.89 for the control group and from 54.69 to 66.94 for the experimental group. The results showed that our vocabulary memorization training improved student's vocabulary inventory.

Table 1

t Test Results for Vocabulary test scores in Each Instruction Method

PA vocabulary instruction	N	Pretest		Posttest		t
		M	SD	M	SD	
control	39	53.46	21.88	62.89	22.73	-4.10***
experimental	39	54.69	24.28	66.94	24.69	-3.04**

Note. The t value of -4.10 is equivalent to a *p* value of .000. The t value of -3.04 is equivalent to a *p* value of .004.

***p<.001 ** p<.01

Effect of Integrated CRI Reading Instruction on Student's Reading Comprehension

The difference in reading comprehension posttest scores between the two groups was analyzed with ANCOVA using the reading comprehension pretest score as a covariate. The result in Table 1 showed that the reading comprehension pretest scores and the reading comprehension posttest scores were significantly correlated, $F(1,75) = 125.77$, $p<0.001$, and the difference in the reading comprehension posttest scores between the two groups after taking the pretest comprehension score as a covariate was significant with $F(1,75) = 7.27$, $p<0.05$. The result demonstrated that the integrated CRI reading instruction ($M = 13.89$, $SD = 3.56$) was better than the traditional translation instruction ($M = 12.95$, $SD = 4.21$) in improving students' reading comprehension abilities. Integrated CRI reading instruction was significantly more effective than the traditional reading instruction in improving students' reading comprehension proficiency levels.

Table 2

ANCOVA for Reading Comprehension Scores as a Function of Instruction Method

Source	*df*	*SS*	*MS*	*F*
RC pretest	1	723.83	723.83	125.77**
Instruction	1	41.82	41.82	7.27*
Error	75	431.66	5.76	
Total	77	1173.04		

Note: RC = Reading Comprehension. *$p < .05$; **$p < .001$

Effect of Integrated CRI Instruction on Student's Reading Strategy Use

The difference in reading strategy use posttest scores between the two groups was analyzed with ANCOVA using the reading strategy pretest score as a covariate. The result in Table 3 showed that the reading strategy pretest scores and the reading strategy posttest scores were significantly correlated, $F(1,75) = 48.05$, $p<0.001$, and the difference in the reading strategy posttest scores between the two groups after taking the pretest comprehension score as a covariate was significant with $F(1,75) = 8.13$, $p<0.05$. The result demonstrated that the integrated CRI reading instruction ($M = 3.45$, $SD = 0.51$) was better than the traditional translation instruction ($M = 3.20$, $SD = .54$) in improving students' reading strategy use.

Table 3

ANCOVA for Reading Strategy use Scores as a Function of Instruction Method

Source	*df*	*SS*	*MS*	*F*
RS pretest	1	8.14	8.14	48.05**
Instruction	1	1.38	1.38	8.13*
Error	75	12.71	.17	
Total	77	22.03		

Note: RS = Reading Strategy. *$p < .05$; **$p < .001$

More analyses were conducted on three general reading strategies: global reading, problem solving, and support strategies. ANCOVA was applied to further analyze the differences in reading strategy posttest scores between control (the Traditional reading instruction) and experimental (the Integrated CRI instruction) groups. After controlling the pretest scores as a covariate, the result in Table 4 showed significant difference between the two groups, $F = 8.13$, $p<0.05$, and the pretest test scores were strongly correlated with the posttest scores, $F = 53.67$, $p<0.001$.   The result revealed that the integrated CRI reading instruction ($M = 3.40$, $SD = 0.54$) was better than the traditional translation instruction ($M = 3.19$, $SD = .56$) in improving students' use of global reading strategies.

Table 4

ANCOVA Results for Global Reading Strategy use Scores

Source	df	SS	MS	F
RS pretest	1	9.58	9.58	53.67**
Instruction	1	1.45	1.45	8.13*
Error	75	13.39	.18	
Total	77	23.84		

Note: RS = Reading Strategy. *$p < .05$; **$p < .001$

Next, the difference between problem solving strategy use pretest and posttest scores for the two methods are further analyzed with ANCOVA using the problem solving strategy use pretest score as a covariate. The result showed that pretest reading strategy use score and posttest reading strategy use score are significantly correlated; $F(1,75) = 42.85$, $p<0.001$ and the difference in posttest problem solving strategy use score between the two instruction methods after taking the pretest strategy use score as a covariate was significant with $F(1,75) = 5.28$, $p< 0.05$. The result demonstrated that the integrated CRI instruction ($M = 3.65$, $SD = 0.66$) was significantly better than the traditional translation instruction ($M = 3.39$, $SD = .59$) in insinuating student's problem solving reading strategy use.

Table 5

ANCOVA Results for Problem solving Strategy use Scores

Source	df	SS	MS	F
RS pretest	1	10.86	10.86	42.85**
Instruction	1	1.34	1.34	5.28*
Error	75	19.03	.25	
Total	77	31.17		

Note: RS = Reading Strategy. *$p < .05$; **$p < .001$

Finally, ANCOVA analyses were applied to analyze the support strategy scores. The ANCOVA analysis with the pretest support strategy scores as a covariate shown in Table 6 reassured that there was a significant difference in posttest support strategy scores between the two groups, F = 6.68, p<0.05, and the pretest scores were also strongly correlated with the posttest scores, F = 32.93, p<0.001. The result confirmed that (*M* = 3.35, *SD* = .48) Integrated CRI improved students' use of support reading strategies and resulted in more text comprehension than a traditional reading instruction (TRI) method (*M* = 3.06, *SD* = .60).

Table 6

ANCOVA Results for Support Reading Strategy Use Scores

Source	df	SS	MS	F
Supprot RS pretest	1	6.84	6.84	32.93**
Instruction Method	1	1.39	1.39	6.68*
Error	75	15.58	.21	
Total	76	24.03		

Note: RS = Reading Strategy. *$p < .05$; **$p < .001$

Effect of Instruction Method on Reading Comprehension in relation to reading strategy

The result of posttest reading comprehension score had been proved to be significantly related to the pretest reading comprehension score and instruction method. More analysis was done to cross-examine the possible effect of reading strategy use on the posttest reading comprehension score using pretest reading strategy use score and posttest reading strategy use score as another covariate.

When Pretest strategy use scores were used as another covariate in the ANCOVA analysis, the difference in posttest reading comprehension score between the experimental and control group was significant with $F(1,74) = 7.21$, $p<.05$, and the strategy use pretest scores were not significantly correlated with the posttest reading comprehension score; $F(1,74) = .30$, $p>.05$ (refer to Table 7).

Table 7

ANCOVA Results for Reading Comprehension Scores as a Function of Instruction in Relation to Reading Strategy Use Pretest Scores

Source	df	SS	MS	F
RC pretest	1	630.44	630.44	108.51***
RS pretest	1	1.71	1.71	.30
Instruction Method	1	41.88	41.88	7.21*
Error	74	429.94	5.81	
Total	77	1173.04		

Note. RC = Reading Comprehension. RS = Reading Strategy.

The F value of 108.51 is equivalent to a *p* value of .000, the F value of .30, a *p* value of .589, and the F value of 7.21, a *p* value of .009.

*p<.05. ***p<.001

Likewise, when the reading strategy use posttest scores were used as another covariate, the ANCOVA analysis also showed significant difference, $F(1,74) = 3.84$, $p<0.05$, in posttest reading comprehension scores between the two groups, and the reading strategy use posttest scores were significantly correlated with the reading

comprehension posttest score, F(1,74) = 13.7, p<.001 (refer to Table 8).

Table 8

ANCOVA Results for Reading Comprehension Scores as a Function of Instruction in

Relation to Reading Strategy Use Posttest Scores

Source	df	SS	MS	F
RC pretest	1	695.98	695.98	141.40***
RS posttest	1	67.42	67.42	13.70***
Instruction Method	1	18.90	18.90	3.84*
Error	74	364.24	4.92	
Total	77	1173.04		

Note. RC = Reading Comprehension. RS = Reading Strategy.

The F value of 141.40 is equivalent to a *p* value of .000, the F value of 13.70, a *p* value

of .000. and the F value of 3.84, a *p* value of .049.

*p<.05. ***p<.001

    The results showed that integrated CRI instruction more effectively improved
students' reading comprehension than the traditional reading instruction did when
controlling the three reading strategy use scores and the reading strategy use posttest
scores were correlated with the reading comprehension posttest scores.

CHAPTER 5

Discussion and Conclusion

Introduction

The chapter first discusses the experimental results and then draws conclusions from the findings in the statistical analysis. The discussion that follows is presented according to the sequence of the hypotheses—from the effect of the integrated CRI reading instruction on reading comprehension and reading strategy use, to the effect of vocabulary memorization training. Suggestions for the improvement of this instruction and recommendations for future research are given at the end of this chapter.

Discussion

Effect of the Vocabulary memorization instruction

Learning principles proposed by Christison (2004) consisted of five principles and all related to effective EFL instruction. The vocabulary instruction will comply with four of the major principles: capitalizing on primacy-recency effects, teaching for better retention, creating opportunities for effective practice, and using cooperative learning and higher order thinking.

Primacy-recency effect. Primacy-recency effect and retention of information (Sousa, 1998) explains the best method of retention for information on the two ends of a learning session, the beginning and the end, and the existence of prime time and down time. Prime time generates the best learning; the proportion of prime time within a learning session increases when the learning episode is shorter. Experimental results show that a 20-minute learning episode can create 90 percent prime time (Christison, 2004). Christison (2004) recommends that the better way is to divide a 50-minute class into 20-minute sessions with small breaks in between and use that prime time for important information to be instructed.

The PA-based vocabulary memorization instruction use the beginning and the end of each learning session for introducing and reviewing new words, and allocated 20 minutes for each learning activity, including the word guessing with the phonological information and word-sorting with the semantic mapping technique, for better retention .

Teaching for better retention. The lecturing method elicits the least retention of information; about five percent is retained 24 hours within teaching, because it required the least amount of participation from the learner. Discussion and practice by "doing" generates 50 and 75 percent retention respectively. The best retention results are exhibited when teachers use the information immediately in ways the students can engage it themselves with ninety-percent retention of the information (Christison, 2004). The PA-based vocabulary memorization training creates an opportunity to derive the

new words from phonological information and identify the error. Every word is learned through self evaluation and the memorization work load is much lessened since only the mistaken part need to be memorized.

Creating opportunities for effective practice. Effective practices must generate improvement, instead of merely repeating an activity (Christison, 2004). Four principles must be followed to ensure any improvement. The instruction must model the process and facilitate enough knowledge and skills for learners to apply that new knowledge and skill (Christison, 2004). For PA-based vocabulary memorization instruction, the teacher must model the usage of guessing the new words with the known phonological information and give words with similar sound-word patterns for reference. Students can actively immerge in the exploration for new words from their pronunciation. Each word is learned and then categorized to generate a semantic map. The memorization is accomplished through recognition, correction, induction, evaluation, and reflection.

Using cooperative learning and higher order thinking. It has been shown that good performance in language English learning results from cooperative learning where students are divided into small groups with cooperative objectives (Kagan, 1980; 1988; McGroarty, 1992). The word guessing and semantic mapping activities are performed in group discussion. Higher order thinking corresponds to the three thinking skills: analysis, synthesis, and evaluation; the higher level of educational goals developed by Bloom (1964). To analyze, synthesize, and evaluate, one must be able to tell the difference and make appropriate classifications (Christison, 2004). PA-based vocabulary memorization instruction requires such processes to create the semantic maps through group cooperation. Therefore, the effective learning can be expected. Our experimental results echo with such expectation.

Effect of the Integrated CRI Reading Instruction on Reading Comprehension

When one looks at the effect of the instructional methods on reading comprehension, results reveal that both Integrated CRI instruction and TRI create an increase in reading comprehension scores for the students in their corresponding groups. However, the increase in the reading comprehension score of the experimental group (i.e., the group exposed to the integrated CRI method) was significantly larger than that of the control group (refer to Table 2).

Once again, it should be remembered that traditional reading instruction places emphasis on translation and explication of grammatical structures. The focus is primarily on the interpretation of each individual sentence. Reading strategies are used for comprehension only. In the current study, the classroom teacher modeled the appropriate use of the strategies to be used and asked students to imitate and practice the strategies. She would then check for understanding of the text. The major class activities

in the TRI sample were teacher-led drilling exercises that included the translation of each sentence pattern for correctness, whereas the major activities in the integrated CRI instruction were teacher-assisted and student-centered interactive group activities and the idea learned from the passages were further organized with the semantic map. Therefore, the information from text is evaluated, consumed, and reorganized. Presumably, the learning will be deeper and the comprehension more complete.

Reading comprehension, as defined by Aarnoutse and Van Leeuwe (2000), is a person's ability to interpret and construct meaning from written text. To interpret sentences in the text, knowledge of decoding words and sentences is indispensable. As Center (1952) points out grammatical knowledge is important to language competence. Krashen (1982) proposed that native speakers who didn't learn rules often ended up speaking fluently, while the second language learners who learned rules were not able to apply them effectively when they focused on linguistic forms, instead of their real language outputs. Learning rules do not always guarantee appropriate language acquisition. Despite Krashen's suggestion that conscious learning of grammatical rules may contribute little to language acquisition, Sharwood-Smith (1991) as well as Fotos and Ellis (1991) asserted the importance of drawing attention to grammatical form for L2 language acquisition.

Krashen (1982) did not deny the importance of comprehensible input for L2 language acquisition. However, he did note that input must be suitable to the learner's capability. Schmidt (1994), on the other hand, pointed out that focusing on language input (e.g., being consciously aware of the language's forms) was vital to L2 development. Grammatical instruction can serve as an effective way to increase a person's focus on the input and the sentence patterns for language acquisition. Overall, grammatical instruction is important in L2 language acquisition.

Research done by O'Donnell (1961) and Sauer (1968) revealed that reading comprehension was not significantly correlated with the knowledge of sentence patterns. Grammatical instruction can support comprehension, but comprehension requires more than linguistic competence. According to Anderson (1999), as noted in a previous chapter, reading involves three different processes: bottom-up, top-down, and interactive processes. Instruction on grammar and memorization of new words can be linked to the bottom-up process. The top-down process is more connected with the strategies used in comprehending the text, for example, making connections, checking for correct interpretation, using contextual clue to guess the meaning of unknown words or phrases, and making inference. The interactive process, according to Grabe (1991), involves linking the reader's prior knowledge with the information presented by a writer in some meaningful way. Towards this end, according to Adams (1990), a learner can use contextual, syntactic, and lexical clues to compensate for any deficiency in

linguistic knowledge to extract meaning.

Many researchers point out that low proficiency readers generally do not possess good reading strategy skills, and they find it difficult to implement the top-down process for better comprehension (Bereiter & Bird, 1985; Carrell, 1985; Carrell, Pharis, & Liberto, 1989; Cotterall, 1990; Palincsar & Brown, 1984). Comprehension requires more than just decoding of words and sentences. It also requires a fairly balanced knowledge base to enhance understanding as well as the command of good reading strategies to ensure correct interpretation (Anderson, 1999). A report from the National Reading Panel (2000) concluded that strategy training directed toward using the strategies and being consciously aware of one's use of strategy in comprehending the text could improve comprehension. Carrell et al. (1989), Raymond (1993), and Song (1998) conducting similar research on strategy instruction in the L2 context also reached the same conclusion. Strategy instruction was suggested as a way to enhance comprehension (Pressley & Afflerbach, 1995; Pressley et al., 1992). Similarly, deBettencourt (1987) and Short (1991) specifically recommend that learning the strategies used by those characterized as good readers could substantially improve reading comprehension. Besides the traditional grammar-translation methods, just like the integrated CRI instruction, the TRI also incorporated the strategy training in its pedagogy to improve reading skills. The improvement in the performance of reading comprehension in both integrated CRI and TRI classes confirms that strategy instruction contributes to reading comprehension.

Rationales for the improved learning outcomes under integrated CRI can certainly be explored. From the researcher's speculation, the advantage of integrated CRI over the TRI instruction might be attributed to some of the following factors: (a) grammar training, (b) prior knowledge, (c) strategy use, and (d) motivation.

Grammar training. Kumaravadivelu (1994) emphasized that output contributed to language acquisition. Research done by Nagata (2000) showed that instruction on grammar followed by production exercises led to better performances in language output than instruction on grammar followed by comprehension exercises. Swain (1985) speculated that language output directed one's attention from semantic meaning to the syntactic structure of the language, which in turn can improve one's grammatical competence. The communicative interaction in the group activities of the integrated CRI may actually stimulate language output and insinuate a deeper processing of the language.

During conversation, students need to explore the meaning from a text and then formulate the words and phrases into an interpretable form for presentation to other members in the group. The information they learned from the passages were further organized with the semantic maps. They have not only comprehended, but also

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evaluated, consumed, and organized the information. According to Kumaravadivelu (1994), language learned through self-exploration resulted in better retention of the material studied. This process draws students' attention to the sentence structures and allows them an opportunity to reflect on the mistakes they have made. Also through cooperative peer interactions a scaffolding process may emerge (Bruner, 1975; Cazden 1988), which can assist the less competent peers to make new practices and lead to improved language competence (Brooks 1992; Donato 1994; Ohta 1995); that is, if proper and timely assistance is provided to construct a zone of proximal development (ZPD) (Vygotsky, 1978).

Prior knowledge. In the integrated CRI sample, each person in the various assigned groups was requested to play the role of a writer. Students were introduced to the genre and the rhetoric of the passages, and they were also trained to identify and practice writing the main ideas and supporting facts in the passages in order to appreciate how the original writers created their works. And semantic mapping practices enabled them to activate their prior knowledge to organize the passages and grasp the backbone of the particular text.   Supposedly, such exercises create improved background knowledge in comprehending the text and more skillful use of strategies to enhance this comprehension process. Findings by Carrell (1985) on the instruction of rhetorical organization support this conjecture.

Peer discussion in the experimental groups in this study provided an opportunity for students to exchange knowledge about the context of a text as well as share their own real life experiences. This expanded the interactions from between reader and text to between text and group members, and improved a student's knowledge and/or contextual base, which seemed to enhance the interactive process and make comprehension of the text easier.

Strategy use. Asking students in the integrated CRI instruction groups to take turns role-playing a writer of the assigned texts is similar to the oral retelling instruction designed by Morrow (1986, 1988, 1996), which, according to Bemhardt (1983), can direct a reader's focus to interaction with the text, initiate reconstruction of the text, and generate an effective way to assess comprehension in the L2 context (Morrow, 1986). In this study, it was hoped that Integrated CRI, utilizing communication-related interactive activities, would increase the student's consciousness of comprehension.

Research findings have demonstrated that such interactions often stimulate the learning of metacognitive strategies among peers (Palincsar, David, Winn, & Stevens, 1991). Semantic mapping is a strategy for organizing different ideas. The semantic mapping technique helps to integrate the scattering information collected from individual passage through strategic reading. More evidence suggests that encouraging students to utilize a broader number of strategies in the learning process (which

Integrated CRI does) can contribute to the development of a more effective inferential strategy process (Bruffee, 1993; Casazza, 1998; Englert, Tarrant, Mariage, & Oxer, 1994). The communicative interactions incorporated with strategy training and semantic mapping practices in the integrated CRI appear to facilitate reading comprehension and the use of more effective learning strategies in this area (Swanson, 1989).

*Motivatio*n. Reading creates a background from which to draw a topic for discussion. The motivation to engage in spontaneous dialogues is critical for serious engagement. In learning a new language, any conversation is hopefully initiated with an intention to pass on some information. This goal is very vital for any serious conversation to occur. The goal must be self-initiated, or the motivation will be weak and the communication will be passive and short, just as is the case in most reading practices that demand a few answers to questions readers are passively invited to reflect upon in class.

The integrated CRI reading instruction tries to correct this dilemma by transforming the reader's role from a passive receptor into an active provider. When readers are put in the position of the writer, they are more likely to be forced to notice what the writer is trying to say; therefore, they might also have a reference from which to draw their own opinions. The students not only examine what the writer says and what conclusions are drawn but they advance into integrating, evaluating, and creating their own opinions, which can make reading become more purposeful.

In the integrated CRI, the reader needs to put more effort into the content of the text, and the interaction between the reader and the writer hopefully becomes deeper as a result. Readers are more prepared to start a communication process, and the motivation to interact with others often becomes stronger. When readers are encouraged to take control of the conversation, spontaneous dialogues may become more possible. The purpose of making an interaction more communicative is thus achieved.

An obvious phenomenon reflecting the effect of integrated CRI on the promotion of a more active role in the students' learning process occurred when students tended to seek assistance from the teacher autonomously and when they actively participated in the discussion during the group activities as well. In addition, more questions were raised and more interactions between classmates and teacher took place in the integrated CRI class than in the TRI class. In contrast, students in the TRI class spent more time writing down translations and seldom asked questions.

Effect of the Integrated CRI on Reading Strategy Use

Results in Table 3 showed that the increase in the reading strategy use scores of the experimental group, taught with the integrated CRI method, was significantly larger than that of the control group.

Students in both groups were taught reading strategies because previous research

supports that strategy instruction as a way to improve reading comprehension. The statistical data generated from this study revealed an increase in both strategy use and reading comprehension, and the reading strategy use posttest scores were correlated with the reading comprehension posttest scores.

Swanson (1989) pointed out that good reading strategy instruction should include modeling a timely and task-oriented implementation of the specific strategy being taught, allowing enough practice to occur to facilitate the learning process. In addition, such strategies should provide sufficient feedback to students as well as activities to stimulate conscious comprehension.

In addition to the regular strategy instruction (e.g., teacher modeling, student practice, and full class activity evaluations), students in the integrated CRI also received training in composition, semantic mapping, and strategy instruction on how to play the role of the writer. The semantic mapping was used to organize the ideas in each paragraph and to draw conclusions, which then will be used in the group activities to practice role-playing the writer to interact with the readers. Therefore, students in the integrated CRI received more instructions on strategy implementation and had more opportunities to practice and receive feedback from their group members as the "readers for reflection." Since the lesson was more intensive, it was hoped that their strategy use might be more elaborate.

The lessons that students received under the integrated CRI method incorporated knowledge of both writing and reading in order to help them represent the writer more effectively. Students learned how the writer organized his ideas, supported his ideas with facts to construct the paragraphs, and structured the paragraphs to complete the articles. During the group activities, the teacher would model the writer to explicate the main ideas or intentions of the writer and the supporting facts she/he had used in the passages; the teacher would also make inferences about the writings as well as draw conclusions from the material. Then after the demonstration, the teacher would encourage students to generate their own ideas by pretending that they were the writers. The teacher then asked students to contemplate how they would present their articles and what kind of supporting facts from their own prior knowledge they might use to strengthen their claims.

In the integrated CRI, the learning of strategies used to extract meaning from the text by the contextual, syntactic, and lexical clues were more from the writer's perspective and self-initiated. The purpose of using such a strategy was more than reading to understand, but learning to construct and create one's own passage using information from the semantic maps as a reference source. The strategy usage, therefore, became more interactive, goal-oriented and, hence, more frequent and elaborative.

Through discussions and peer interactions, students had time to examine their

understanding about the text; cognitive strategies were learned through implementation and reflection. Peer interactions offered an opportunity to negotiate meaning from the text and to compare and contrast strategy use. Learning involving these cognitive strategies appeared to be more efficient and effective. This seems consistent with previous research. That is, researchers acknowledge that interactions help to develop inferential strategy, and they seem to be more effective than the traditional strategy instruction method which only transfers the information about strategy without giving practice in strategy use (Bruffee, 1993; Casazza, 1998; Englert, Tarrant, Mariage, & Oxer, 1994).

Peer interactions also appear to stimulate learning of metacognitive strategies (Palincsar, David, Winn, & Stevens, 1991). Habits of using metacognitive strategies were spontaneously developed in peer interactions. The more competent peer can serve as a model for the rest of the members in the group. Members in the group can observe how this person implements his/her reading strategy to comprehend a text. Previous research has demonstrated that group activities supported with peer tutoring and peer conference can initiate the modification and transfer of strategies (Klingner & Vaughn, 1996; Klingner, Vaughn, & Schumm, 1998; Palincsar & Brown, 1984). Research conducted by Keer and Verhaeghe (2005) also showed that whole class strategy instruction supported with tutoring by more competent peers exerted better performance in strategy learning.

According to Crook (1994) and Rommetveit (1974), collaboration must be based on an attitude that allows group members to find a common goal and build a mutual understanding on it. The integrated CRI group positioned group members as either the writer or the readers; these roles facilitated a common goal, to enhance understanding of the text by sharing prior knowledge and strategies through collaborative interactions.

The integrated CRI satisfied many students' needs by encouraging them to talk, allowing them to make mistakes, and providing timely assistance to overcome any existing language barriers. Confidence must be built up through successes in various learning exercises (i.e., through practice). When students see advancement in their learning, they often will develop greater confidence in their abilities.

In this study, many students found that by speaking out in their own words they got the chance to let the teacher help them correct the mistakes they had accumulated from the past. Language became more vivid and functional as a result, and they learned better during the interaction practices. They experience improvements in speaking and reading competency levels through communicative interaction. The integrated CRI appears to have satisfied their needs for improved English communication and developed increases in the perception of self-efficacy as well.

Sharing the content of an author's text in one's own words to the whole class added

even more practice in language usage. Students were exposed to more examples of different sentence patterns. In addition, they had more opportunities to add to their knowledge of grammatical rules, and the learning was more spontaneous. It also provided feedback so the teacher could see how much students had learned, what level of language competency they were in, their weaknesses, and their common mistakes in order to give timely assistance.

Conclusion

Hypothesis 1: Integrated CRI will elevate student's reading comprehension levels.

The statistical data generated in this research demonstrates that integrated CRI can significantly improve a student's reading comprehension skill, and this method of instruction even out-performed the traditional reading instruction in terms of outcome here. The communicative language teaching pedagogy combined with reading strategy instruction and group activities (e.g., role-playing a writer) turned out to be more effective than the traditional reading instruction alone.

From students' descriptions, most of them appeared to be satisfied with integrated CRI. Some felt that integrated CRI had helped them to communicate in class and that this was the most impressive part of the instruction. Yet, still other students complained about having trouble adapting to this new pedagogy. Broadly speaking, integrated CRI instruction promoted most students' interest in English, molded a social context for interaction, and made learning more effective than the traditional instruction.

Hypothesis 2: Integrated CRI will elevate student's reading strategy usage.

In general, integrated CRI promoted student's reading strategy use, and the research results also showed that its effect was greater than the traditional reading instruction. Strategy instruction followed by translation of the text was less effective than strategy instruction incorporating group activities to utilize strategies to comprehend the text and then reporting on the results to the group members.

Role-playing the writer to present a text focused students' attention on the content of the text and raised their consciousness of the implementation of their strategy use. Group activities also appear to have stimulated implementation, imitation, and reflection all of which improved students' reading strategy use.

Hypothesis 3: PA based vocabulary training has an impact on the size of a student's vocabulary inventory.

The PA based vocabulary memorization training turned out to be very effective in helping students recognize new words. Most students have trouble learning new words. They stressed that this training changed their perceptions of learning new words. They realized that they could learn from what they knew to predict the unfamiliar word, and organize these words for better memorization. The semantic map was acknowledged as a good tool to organize and recall what they had learned. The PA based vocabulary

memorization training also helped students develop confidence for success, which, in turn, stimulated more serious engagement in the learning process.

Suggestion for Professional Practices

The pedagogy designed in this study was based on the philosophy that language learning must be oriented toward communication and self-initiation. Reading strategies can be taught to enhance students' reading skills, but confidence and interest in a language are far more important for a serious learning result. Good vocabulary memorization training could help to lay a good foundation for learning language, whereas meaningful interactions were required to draw upon students' interests and satisfy their needs. Communicative interaction could fulfill such needs. Playing the role of a writer for a communicative interaction appears to have cultivated self-initiated reading; as a result, strategy learning can become a more self-aware and engaging process.

Besides the cultural barrier, most students also carried a misconception about learning a new language. This impression, unfortunately, has been shaped by previous new language experiences; that is, students often believed that language should be presented only when it is in its exact form, or it is an exposure of self deficiency. They did not realize that communicating sentences with some mistakes in its elements still carries some meaning, though this meaning might cause misinterpretation and that correct form is a result of the incessant modification through practice. The teacher must be capable of helping students overcome cultural barriers and/or misconceptions and invite students to speak out.

To speak out, students not only need to be willing to speak, they also need to know how to speak out, meaning they must possess grammatical competence. The first step toward establishing communicative competence is cultivating grammatical competence. Students need to know the correct meaning of both words and sentence structures before they can apply the words and sentences in their communications. They also need to learn proper pronunciation of words in order to be effective communicators. Various other instruction methods can be incorporated into the communicative teaching pedagogy provided; such methods can often help to cultivate communicative competence.

The vocabulary memorization training used audio-lingual method to teach students correct pronunciation, stress, and intonation, as well as how to sequence smaller language chunks or phrases into complete sentences for familiarity, to speak out the sentences from the basic structure to more complicated forms, and to drill for mastery (Larsen-Freeman, 2000).

Once students have these basic skills, they are encouraged to learn new words and

sentences by themselves because that process can be more satisfying. They should be encouraged to generate new words using semantic mapping and create their own sentences based on what they have learned about the rules and common features in the words and sentence structures. This type of generalization is an important process in a child's language acquisition (Lightbown & Spada, 2003). This concept also applies to adults. Ellis (1997) pointed out an important aspect in the second-language learner's interlanguage—their grammar is constantly changing to add to its complexity. Generalization and expansion are thus vital to the development of language competence.

When students become more capable of applying their linguistic knowledge, the teacher may pull back behind the scenes and act as a "human computer" (Larsen-Freeman, 2000, p. 93), always available to transcribe linguistic knowledge for the students' needs. Students are welcome to speak in the community, a small group, with either their first or second language at their own will. In a small group, students will generally feel more secure and private than in the whole class. Occasionally, when students have trouble speaking, they are also invited to write instead. The point is to eliminate the stress and anxiety emerging from the prospect of speaking a second language in front of others. Also, supporting the translation for what students intend to say will help them transit from their first language to the second language and trigger the desire to speak out in their own words.

When students possess the grammatical competence to comprehend a text, they are ready to read for comprehension. Communicative competence can be developed through discussion in group activities during the reading strategy instruction. Students must be reminded that facial expression, gesture, and movement can all serve to convey intention and meaning. Reading strategy instruction can help students speculate meaning and develop awareness of their learning process. Reading strategy was used to extract meaning from the written text, whereas communicative competence was used to speculate meaning from the interlocutor. Both stimulate the behaviors to negotiate meaning from the comprehensible input that, as Krashen (1982) claims, contribute to language acquisition.

The activities generated from role-playing a writer in integrated CRI can promote training in reading strategy with the cultivation of communicative competence, and in addition to this, role-playing can also stimulate production of comprehensible output. Long's interaction hypothesis (1983) proposed that comprehensible input must be regulated in the process of negotiating for meaning to become most effective, and Swain (1995) stressed the importance of producing comprehensible output for language acquisition. It can therefore be argued that both receiving comprehensible input and generating comprehensible output through interactions for communication are essential to language acquisition. Language instruction must facilitate activities that provide

comprehension input and cultivate the production of comprehensible output.

Limitations and Recommendations

1.   The success of this pedagogy relied heavily on students' motivation to communicate. The teacher's qualifications and personality are critical in cultivating the motivation to learn a second language. The teacher must be able to create a warm atmosphere that encourages opinions and persuades students to change their misconceptions about speaking a second language. The teacher also needs to persuade students that making mistakes in their communications with others is a normal and necessary process towards mastery. In addition, these struggles can help them experience the pleasure in learning a foreign language. This pedagogy might not excite the same results if the teacher cannot elicit students' desire to communicate.

2.   The size of the class must be small, less than forty, or the teacher will not be able to attend to the needs of the whole class. In fact, the smaller the class is, the more time the teacher can use to attend to individual student, and the probability of instilling communicative competence will also expand.

The teacher must structure speaking by probing and guessing what the student intends to say and by giving sample sentences for them to imitate. It is vital to offer timely and proper assistance when eliciting speaking. The more students try to speak, the more confident they are likely to become. Eventually they will try to speak more frequently in the target language and build up their communicative competence. However, it takes much time to get every group to communicate because support and persuasion can be time-consuming, and sometimes the activities extend into the normal break time before they can be finished.

3.   This research investigated only how students felt about their strategy use with the survey of reading strategy; it did not assess the real competence of using any particular strategy. The proportion of the contribution of each strategy needs to be reexamined so more time can be spared on more effective ones.

4.   As mentioned above, a small class size is critical to the success of this pedagogy. The teacher must be easily available to her/his students in order for a communicative, interactive modality to be successful. On the other hand, a small overall sample size might introduce bias to the experiment, either underestimating or overemphasizing treatment effects. As a result, the replication of this study is essential in confirming that these treatment results are consistent across various treatment populations.

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Appendix

The Sample Reading Comprehension Tests

本部份共 30 題，包括數段短文，每段短文後有 1~3 個相關問題，請就
試題冊上 A、B、C、D 四個選項中選出最適合者，標示在答案紙上。

Question 1

PLEASE BUCKLE UP

Your safety is our top concern

1. Where might a person see this sign?
   A. In a zoo.
   B. In a supermarket.
   C. On the highway.
   D. On the top floor of a building.

Questions 2-3

March 24, 2000

To: Colet@earthlink.net
From: Nina 19@pchome.com
RE: Thank you very much

Dear Colet,

I've just received the presents you asked Sandy to bring me. They are really lovely.

Sandy said you were very kind to her during her stay at your home. You even took her to Yellowstone Park, which she had always wanted to visit. This summer was definitely the most unforgettable one she's ever had. I don't know how to thank you enough for treating my little girl so warmly. I only hope that you can visit us someday and let us show you the most beautiful scenic spots in Taiwan.

Best regards,

Nina

2. What is the most probable relationship between Nina and Sandy?
   A. Friends

B. Mother and daughter

C. Co-workers

D. Teacher and students

3. What do we know about Sandy?

A. She took a trip overseas this summer.

B. She has never been to Yellowstone Park.

C. She didn't enjoy her stay at Colet's home.

D. She is a college student.

Questions 4-6

Sea Island Resort

Spend your next vacation with us

Enjoy our:
- Private beach
- Two swimming pools
- Four tennis courts
- Five restaurants
- Beautiful weather all year

It's easy to get here.

We're just eight kilometers from the airport.

Call your travel agent to make reservations.

4. What is this ad for?

A. An airline

B. A travel agency

C. A vacation place

D. A sports club

5. What is one thing you cannot do at Sea Island Resort?

A. Swim

B. Play tennis

C. Eat

D. Play golf

6. How can you make reservations for Sea Island Resort?

    A. Call a travel agent

    B. Write a letter to the resort owner

    C. Call the airport

    D. Send an email

Questions 7-9

MUSIC TOWN
GRAND OPENING

Music Town has finally arrived in Taiwan! Don't miss our Grand Opening celebration, starting this weekend! For nine days only, you'll enjoy savings of 15 to 30 percent on all of your favorite music. This is the place that offers the largest selection of CDs and cassette tapes on the island – classical, jazz, pop, blues, rock and roll, and more.

Be our one-thousandth customer, and win great prizes!

7. Why is Music Town celebrating?

    A. It is opening a larger store.

    B. It is opening a new CD section.

    C. It is opening again after a long holiday.

    D. It is opening its first store in Taiwan.

8. How long will the sale last?

    A. A month

    B. More than two weeks

    C. More than one week

    D. A week

9. According to the advertisement, what does Music Town **NOT** promise to do during the sale?

A. Deliver CDs and cassette tapes free

B. Give gifts to its one-thousandth customer

C. Offer a wide variety of music

D. Lower its prices

Questions 10-12

To: All Food Service Employees
From: L. R. Wang, Manager
Subject: Serving Customers

   I am proud of our fast food restaurant, and I think that all of our employees work hard. But some of our counter workers are forgetting something important. You need to be not only fast and exact, but also friendly.
   Taking food orders again and again can make you tired, and even bored. This is **natural.** But don't let these feelings affect the way you behave toward customers. Remember that THE CUSTOMER COMES FIRST. We consider him to be very important, and we are happy to provide great service for him. So always give your customers a sunny smile. Show them that they are special to us, and they will come back

10. Why did the manager write this memo?

   A. Employees were too slow.

   B. Employees weren't friendly enough.

   C. Employees forgot to give change.

   D. Employees gave great service.

11. What does the manager say about repeating a job many times?

   A. Being busy makes the work more fun.

   B. The work should become easier and easier.

   C. Practicing more helps employees improve.

   D. Employees can slowly lose their energy.

12. What does the word "natural" in line 9 mean?
    A. Green
    B. Common
    C. Good for health
    D. Warm and bright

Questions 13-15

The Martin family took a two-week vacation last summer. The day before the trip, all of the family members helped with the preparations. Mr. Martin asked the neighbors, the Smiths, to check the mailbox every day and take out any letters or advertisements.

After lunch, Mrs. Martin took all the extra food out of the refrigerator; she gave some to the Smiths, and she threw away the rest. Paul Martin put several cans of dog food in a bag, and he took his big dog Roxy over to his friend's house. Mary and Susie Martin cleaned the whole house. They swept and washed the floors in all of the rooms, dusted the furniture, and cleaned the bathroom.

That evening, the Martin family ate dinner at a restaurant. When they arrived home, Mr. Martin told the family to take off their clothes and put on T-shirts and shorts. Then his youngest daughter Cindy began to wash and dry everyone's clothes.

"Now," said Mr. Martin, "we can begin to pack our suitcases for the trip."

13. What is a good title for this story?
    A. Family Holiday Fun
    B. Preparing to Leave Home
    C. A Trip to the Store
    D. A Party for the Neighbors

14. How many people are there in the Martin Family?
    A. Eight
    B. Seven
    C. Five
    D. Six

15. Why did the family change their clothes?
    A. To clean the house
    B. To wash the clothes
    C. To prepare for visitors
    D. To go to a restaurant

明新科技大學 ___97___年度 研究計畫執行成果自評表

計 畫 類 別 ：	□任務導向計畫 □整合型計畫 ■個人計畫
所 屬 院 (部) ：	□工學院　　　□管理學院　　□服務學院 ■通識教育部
執 行 系 別 ：	應用外語系 (中心)
計 畫 主 持 人 ：	張島　　　　職 稱：副教授
計 畫 名 稱 ：	整合語意構圖與策略訓練於閱讀教學
計 畫 編 號 ：	MUST-97-應外-02
計 畫 執 行 時 間 ：	97 年 3 月 1 日 至 97 年 9 月 30 日

<table>
<tr><td rowspan="2">計畫執行成效</td><td>教學方面</td><td>1.對於改進教學成果方面之具體成效：

改　進　英　語　閱　讀　教　學　方　法

2.對於提昇學生論文/專題研究能力之具體成效：

3.其他方面之具體成效：_____</td></tr>
<tr><td>學術研究方面</td><td>1.該計畫是否有衍生出其他計畫案　□是　　　■否
　計畫名稱：_____
2.該計畫是否有產生論文並發表 □已發表　□預定投稿/審查中　■否
　發表期刊(研討會)名稱：_____
　發表期刊(研討會)日期：____年___月___日
3.該計畫是否有要衍生產學合作案、專利、技術移轉　■是　　　□否
　請說明衍生項目： 教科書適用性的評估。</td></tr>
</table>

成果自評	計畫預期目標： 尋找較佳的閱讀教學方法以提升教學成效。 計畫執行結果： 培養學生的閱讀觀念，閱讀目的是為了溝通以及應用，學生的閱讀能力已經提升了。 　　　　　　　　　　　　　　　　　　　　預期目標達成率： 85 % 其它具體成效: 學生在英語會話能力方面相對提升，即使成績較差者都開口對話，提升英文學習的興趣，也對國際化有助益。 　　　　　　　　　　　　　　　　　　　　　　(若不敷使用請另加附頁繕寫)