

EFFECTS OF PERSONAL INTELLIGENCE READING INSTRUCTION ON
ENGLISH READING ABILITY AND READING ENGAGEMENT OF
THAI UNIVERSITY STUDENTS

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ผลของการสอนการอ่านแบบเน้นเข้าใจปัญญาส่วนบุคคลที่มีต่อความสามารถทางการอ่าน
ภาษาอังกฤษและการมีส่วนร่วมในการอ่านของนักศึกษาไทยระดับปริญญาตรี

นางสาวสลิลลา วงศ์กระจ่าง

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาศิลปศาสตรดุษฎีบัณฑิต

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บัณฑิตวิทยาลัย จุฬาลงกรณ์มหาวิทยาลัย

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ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

สลิลา วงศ์กระจ่าง : ผลของการสอนการอ่านแบบเน้นเซาว์ปัญญาส่วนบุคคลที่มีต่อความสามารถ
ทางการอ่านภาษาอังกฤษและการมีส่วนร่วมในการอ่านของนักศึกษาไทยระดับปริญญาตรี
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THAI UNIVERSITY STUDENTS) อ. ที่ปรึกษาวิทยานิพนธ์หลัก: ผศ. ดร. อภัสรา
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งานวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาผลของการสอนการอ่านแบบเน้นเซาว์ปัญญาส่วนบุคคลที่มีต่อ
ความสามารถทางการอ่านภาษาอังกฤษและการมีส่วนร่วมในการอ่านของนักศึกษาไทยระดับปริญญาตรี กลุ่ม
ตัวอย่างประกอบด้วยนักศึกษาปริญญาตรีชั้นปีที่หนึ่งวิชาเอกภาษาอังกฤษ 39 คน ที่ลงทะเบียนวิชาทฤษฎีการอ่าน
อนุเขตโดยใช้วิธีการสอนการอ่านแบบเน้นเซาว์ปัญญาเป็นเวลา 10 สัปดาห์ ข้อมูลเชิงปริมาณได้มาจากคะแนน
ของนักศึกษาที่ทำแบบทดสอบความสามารถทางการอ่านภาษาอังกฤษก่อนและหลังการทดลอง แบบสอบถาม
การมีส่วนร่วมในการอ่านก่อนและหลังการทดลอง แบบประเมินการมีส่วนร่วมในการอ่าน และแบบสอบถาม
เซาว์ปัญญาส่วนบุคคลทางการอ่าน ข้อมูลเชิงคุณภาพได้มาจากใบงานแสดงกลวิธีและปัญหาที่พบขณะอ่าน
และการสังเกตชั้นเรียนของผู้วิจัยขณะสอนเพื่อหาวิเคราะห์ผลของการสอนที่มีต่อเซาว์ปัญญาส่วนบุคคล
ทางการอ่านของนักศึกษา

จากผลการทดลองพบว่าคะแนนของนักศึกษาที่ทำแบบทดสอบความสามารถทางการอ่าน
ภาษาอังกฤษก่อนและหลังการทดลองของนักศึกษาเพิ่มขึ้นอย่างมีนัยสำคัญ ($p < .05$) และผลจากแบบสอบถาม
การมีส่วนร่วมในการอ่านหลังการทดลองของนักศึกษามีค่าเฉลี่ยมากกว่าผลของการตอบแบบสอบถามก่อนการ
เรียนที่ 3.48 ค่าเบี่ยงเบนมาตรฐาน 0.88 โดยนักศึกษามีการพัฒนาด้านการใช้กลวิธีในการอ่าน มีความเชื่อมั่น
ในการอ่าน และมีแรงจูงใจในการอ่านมากขึ้นเมื่ออ่านร่วมกับเพื่อน ซึ่งผลดังกล่าวสอดคล้องกับผลจากแบบ
ประเมินการมีส่วนร่วมในการอ่านขณะร่วมกิจกรรมการเรียนการสอน อย่างไรก็ตาม แรงจูงใจภายในของ
นักศึกษาในการอ่านไม่เพิ่มขึ้นหลังจากการทดลอง ผลจากแบบสอบถามเซาว์ปัญญาส่วนบุคคลทางการอ่าน
พบว่านักศึกษากลุ่มใหญ่มีค่าเฉลี่ยโดยรวมหลังการทดลองมากกว่าก่อนการทดลองที่ 2.72 ค่าเบี่ยงเบน
มาตรฐาน 0.80 ผู้เรียนส่วนใหญ่ใช้กลวิธีที่กำหนดเป้าหมายในการอ่าน ตรวจสอบความเข้าใจในการอ่านของ
ตนเองมากขึ้น ซึ่งผลสอดคล้องกับการประเมินใบงานของนักศึกษา และการสังเกตชั้นเรียนซึ่งแสดงให้เห็นการใช้
กลวิธีในการอ่านแบบเน้นเซาว์ปัญญา ได้แก่ การวางแผน และการตรวจสอบความเข้าใจของตนเอง แสดงให้เห็นว่า
นักศึกษารู้จักใช้กลวิธีในการอ่านแบบเน้นเซาว์ปัญญาส่วนบุคคลในขณะอ่านเรื่อง ผลจากการทดลองชี้ให้เห็นว่า
การสอนการอ่านแบบเน้นเซาว์ปัญญาอย่างชัดเจนช่วยส่งเสริมการสอนการอ่านเพื่อความเข้าใจและการมีส่วนร่วม
ในการอ่านซึ่งเป็นตัวแปรสำคัญในการส่งเสริมให้นักศึกษามีความเชื่อมั่น และความสามารถ ในการอ่าน
บทความภาษาอังกฤษ

สาขาวิชา	ภาษาอังกฤษเป็นภาษานานาชาติ	ลายมือชื่อนิสิต.....
ปีการศึกษา	2556	ลายมือชื่ออ.ที่ปรึกษาวิทยานิพนธ์หลัก.....

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SALILA VONGKRACHANG: EFFECTS OF PERSONAL INTELLIGENCE READING INSTRUCTION ON ENGLISH READING ABILITY AND READING ENGAGEMENT OF THAI UNIVERSITY STUDENTS.

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This study explored the impact of Personal Intelligence Reading Instruction (PIRI) on Thai university students' English reading ability and reading engagement. The participants were 39 first-year undergraduate students majoring in English enrolled in a Paragraph Reading Strategies course. PIRI was introduced to the students for 10 weeks. For the quantitative data, the English reading ability pre- and post-test scores were compared using a dependent samples t-test. Reading Engagement Index (REI) was employed in order to compare the level of reading engagement before and after the intervention. A reading engagement checklist was also used to observe four dimensions of students' engagement, affective, behavioral, cognitive, and social engagement. Students' Personal Intelligence (PI) profiles were collected to study the improvement of students' personal intelligence skills. For the qualitative data, students' worksheets and a classroom observation form were used to triangulate the data from the PI inventory.

The findings showed that there were significant differences between the students' English reading ability pre- test mean score ($M = 6.97$, $S.D. = 2.59$) and their post-test mean score ($M = 8.31$, $S.D. = 2.31$). The students' self-reports of REI were associated with positive changes in behavioral, affective, cognitive and social engagement of the reading engagement checklist. Although the students had low level of intrinsic motivation, they were confident readers using more cognitive strategies and social engagement. These findings were correlated with students' strategy use according to their Personal Intelligence profiles. The students showed a preference of intrapersonal intelligence such as goal setting and monitoring. Data obtained from classroom observations and student worksheets also was consistent to the students' levels of personal intelligences. Based on the findings, reading improvement and reading engagement through PIRI instructional method should be encouraged, as it is a factor likely to foster students' reading ability confidence in reading.

Field of Study English as an International Language Student's Signature.....

Academic Year 2013 Advisor's Signature.....

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CHAPTER I

INTRODUCTION

1.1 Background of the Study

The National Statistical Office's latest report on reading rate notes that the overall reading rate among Thais over the age of six dropped from 69.1% in 2005 to 66.3% in 2008 (The Thai National Statistical Office, 2009). The report is based on the results of a survey of 53,000 families throughout the country. As a result, the cabinet approved the Education Ministry's proposal to declare reading a national priority, to make April 2 of every year "Reading Day," and the years 2009-2018 the "Decade of Reading" (Bangkok Post, 2009: Online).

To instill a life-long love of books into the young Thai generation, reading teachers should make reading more accessible and more enjoyable to students in order to engage students' intelligences more fully as they read: science, social studies, and literature, or as students read for their own purposes and pleasure in their own time.

Personal intelligences (PIs) may bridge the gap between students' learning styles and English reading instruction. Gardner (1983) identifies two personal intelligences—intrapersonal intelligence involves an examination and knowledge of one's own feeling, motivation, and behavior while interpersonal intelligence involves an ability to interpret and understand the intentions and desires of others. To illustrate, intrapersonal intelligence helps readers set reading goals, monitor comprehension, and evaluate their own style of learning. Interpersonal intelligence, on the other hand, helps provoke active learning through working collaboratively with others, sensing others' feelings, and exchanging explanations.

Personal Intelligence Reading Instruction (PIRI) is an instructional approach including aspects of thinking and learning that support the acquisition of meta-cognitive awareness and reading strategies. The purpose of PIRI is to promote students' reading awareness while reading academic or school-related materials. Such awareness entails readers' knowledge of strategies for processing texts, the ability to monitor comprehension, and the ability to adjust strategies as needed. This concept offers great insights into how learners manage their cognitive activities to achieve comprehension before, during, and after reading.

Reading in a foreign language is more challenging because the act of reading is complex and demanding on the brain. It is not just someone learning to read in another language; rather, L2 reading is a case of learning to read with languages (Grabe, 2009). Individuals vary in the way they process information. For example, some students prefer studying in groups and like to discuss information with others, whereas others learn better in an independent setting. However, it seems to be impossible for students, as adults, to always work in their preferred mode. Given the important role, reading plays in tertiary-level students. Many language and literacy educators have also become increasingly interested in examining the strategies which second language learners use to acquire academic literacy skills, especially in reading, to succeed during their university years.

Several studies on learners' metacognitive aspects of reading strategy use have discovered that successful readers generally display a higher degree of metacognitive awareness or reading awareness which enables them to use reading strategies more effectively and efficiently than their unsuccessful peers (Sheorey and Mokhtari, 2002; Zhang, 2001; Zhang et al., 2008). Moreover, a major contribution of reading strategies to fluent reading is the increasing automaticity as a reader becomes more proficient (Anderson, 2009; Block and Pressley, 2007; Sinatra, Brown, and Reynolds, 2002).

Strategic readers also engage actively in reading, read far more extensively, and have the motivation to read for a longer period of time. When readers lack interest in what they are reading, it certainly takes much more effort to sustain their attention than the time of reading what they truly enjoy. These readers use reading to seek information relevant to their needs, interests or pleasures. They build efficiency and automaticity in strategy use for routine situations that they commonly encounter. They have heightened levels of metacognitive awareness that they can use when needed. In addition, they engage in difficult and challenging texts and tasks with which sets of strategies that work well for them in combination (Block and Pressley, 2007; Pressley, 2006; Pressley and Afflerbach, 1995; Pressley and Fingeret, 2007).

According to these studies, reading engagement comes to play a role. Guthrie (2008) proposed that reading engagement and reading comprehension are correlated.

Ample evidence suggests that when teachers create conditions that enable reading engagement to be extensive and satisfying, students' reading comprehension and their measurable achievement increase (Guthrie and Cox, 2001). The engagement in reading is the joint function of motivational processes and cognitive strategies during reading for comprehension. In this perspective, more highly engaged readers are both internally motivated and strategic while less engaged readers show lower motivation and less use of strategies for comprehending texts.

In order to promote the reading engagement, four phases of teaching are employed in this study. The phases consist of Observe and Personalize, Search and Retrieve, Comprehend and Integrate, and Communicate to Others (Guthrie & Cox, 2001). This is the instructional framework used for planning and implementing classroom instruction.

With the combination of personal intelligence strategies and the four phases of teaching for long-term reading engagement, students should be able to become engaged and strategic readers. Through the personal intelligence strategies, the students can gain better reading comprehension, and develop their thinking processes. During the four phases of teaching, reading engagement can also be enhanced. The engaged readers want to learn; they take satisfaction in successful reading and believe in their reading skills. Importantly, they persist in the face of difficulty and exert continuing effort until they have attained their goal of understanding a passage or have completed a portion of a project. The possible results are that the students will not only read and enjoy it, but they will also know how to read effectively and efficiently.

Apart from that, strategies also play an important role in how successful students are in understanding what they read. The students use a variety of strategies to assist them with the acquisition, storage and retrieval of information. However, the students tend to be less aware of reading strategies such as noting length and organization, noticing what to read closely and what to ignore, analyzing and evaluating the information, visualizing information, thinking about difficulties while reading, reading aloud to help them understand what they read, asking questions of the text, paraphrasing and note-taking. All of these are necessary for strategies such as

problem solving and decision making. Therefore, for college students, critical reading strategies should be focused on reading instructions, which might strengthen students' problem solving ability by utilizing the strategies appropriately.

1.2 Statement of the Problems

Thai students are exposed to formal English language learning for many years, but their English reading ability is not satisfactory. One of the main reasons may due to traditional teaching reading method Thai teachers use (Chandavimol, 1998). Other factors affecting students' facility in second reading comprehension include issues with first language ability, low level decoding skills, lack of cultural knowledge of the materials, lack of opportunities to read, and inadequate exposure to reading materials (Chomchaiya and Dunworth, 2008; Suknantapong, Karnchanathat, and Kannaovakun, 2002).

The students at Songkhla Rajabhat Univerisity might face some of reading difficulties mentioned above. Songkhla Rajabhat University is located in Songkhla province, the south of Thailand. Nearly half of the students are Muslim moving from the southernmost provinces of the country due to the acts of terrorist insurgency. Most of them are from private Islamic schools that provide both religious and non-religious subjects. These students have Melayu as their first language because they daily use it to communicate in their family and communities. Therefore, some of them have a low level of proficiency in Thai language and it could be implied that they study English at school as their third language.

This situation cried for attention as reading is a fundamental and necessary skill for anyone learning English as a foreign language, especially in the university levels. Learners use reading as a tool for learning and acquiring English and to gather information for the professions of medicine, science, technology and law, etc. Moreover, most of the tasks and assignments in the university levels involve reading and researching. Students depend on effective reading to acquire knowledge. Poor reading may interfere with students' overall achievement.

Thus, PIRI was developed in order to encourage and activate students to read interactively. It equips the students with effective personal intelligence strategies that could improve students' reading ability and reading engagement.

1.3 Research Questions

This study addresses the following research questions:

1. To what extent does PIRI increase students' English reading ability?
2. To what extent does PIRI increase students' levels of reading engagement?
3. To what extent does PIRI improve students' PIs profiles?

1.4 Objectives of the Study

The objectives of this study are the following:

1. To examine the effects of PIRI on students' English reading ability.
2. To examine the effects of PIRI on students' levels of reading engagement.
3. To examine the effects of PIRI on students' PIs profiles.

1.5 Statement of Hypotheses

There is abundant evidence that content-based and strategy instruction are particularly needed and effective for those students with lower reading skills (McNamara, 2007; Ozgungor and Guthrie, 2004; O'Reilly and McNamara, 2007; Wichadee, 2011; Huang and Newbern, 2012; Akkakoson and Setobol, 2009). Obviously, many research studies also point out that reading achievement and engagement are reciprocal (Anderman and Wolters, 2006; Wentzel and Wigfield, 2009; Logan, Medford, and Hughes, 2011; Taboda et al., 2009; Wolters et al., 2013).

According to the previous research, the following hypotheses were tested.

1. The post-test mean scores of students' English reading ability are significantly higher than the pre-test mean scores at 0.05 level after the Personal Intelligence Reading Instruction.
2. The students' levels of reading engagement improve significantly after the intervention.
3. The students' Personal Intelligence profiles improve significantly after the intervention

1.6 Scope of the Study

The population in this study was undergraduate students of Songkhla Rajabhat University (SKRU), Songkhla province, Thailand. The samples were 39 first year students majoring in English enrolled in the Paragraph Reading Strategies course (1551103) in semester 1, academic year 2011.

Variables in the study included an independent variable, i.e., Personal Intelligence Reading Instruction (PIRI) and dependent variables, i.e., scores of English reading ability, levels of reading engagement, and Personal Intelligence profiles. The data were collected from the following research instruments and methods: the English Reading Ability pre- and post-tests, reading engagement checklist, Reading Engagement Index, and Personal Intelligence inventory. The data analysis methods included: descriptive statistics, paired samples t-test, and content analysis.

1.7 Delimitations

This study was carefully designed to optimize the internal and external validity, but there was not without any limitations. There were two delimitations that should be considered when interpreting the findings from this study.

1. The reading rate was not considered as reading comprehension in determining students' reading abilities.
2. Students' writing abilities were not explored in this study as there was no explicit writing instruction involved.

1.8 Definition of Terms

Personal Intelligences Reading Instruction (PIRI) is an instructional approach including aspects of thinking and learning that emphasizes its highly personalized and strategic reading behaviors. The purpose of PIRI is to promote students' reading awareness while reading. Such awareness entails readers' knowledge of strategies for processing texts, the ability to monitor comprehension, and the ability to adjust strategies as needed. It is subdivided into two components:

Intrapersonal intelligence involves an examination and knowledge of one's own feeling, motivation, and behavior. Specifically, intrapersonal intelligence helps

readers by enabling them to set reading goals, monitor comprehension, and evaluate their own style of learning.

Interpersonal intelligence involves an ability to interpret and understand the intentions and desires of others. It helps provoke active learning by allowing students to work collaboratively with others, sense others' feeling, and exchange explanations with one another.

Reading Engagement was defined by Guthrie and Wigfield (2000) as interacting with text in ways that both strategic and motivated.

The engaged readers in this study, hence, are motivated to read, actively apply strategies, and socially interactive while reading. The students' reading engagement was assessed by using the Reading Engagement Index (REI) and the reading engagement checklist.

Affective engagement is positive emotional reactions toward teachers, classmates, and school. The affective engagement facilitates students' sense of connection with school and commitment to their schoolwork. It connotes more strongly the physical display of emotion. Physical cues are the indicators of this dimension in the present study.

Behavioral engagement refers to active participation in academic activities, as demonstrated through attention, persistence, and asking and answering questions.

Cognitive engagement can be assessed when students think conceptually during learning activities and use strategies such as comprehension monitoring during learning.

Social engagement refers to the involvement in classroom learning or the exchange of interpretations of text and other ideas about reading and writing with peers in a classroom.

English Reading Ability covers comprehension skills, strategies and knowledge resources available to the reader, according to Grabe and Stoller (2011).

In this study, English reading ability is the ability to read English texts and understand the main ideas and important details. It was measured by the reading ability test. The test questions assessed different aspects of reading comprehension: referencing, finding main ideas and details, identifying purposes, making inference, word recognizing, and evaluating the information.

Thai University Students are thirty-nine English major undergraduate students who enrolled in the Paragraph Reading Strategies course (1551103) in semester 1, academic year 2011 at Songkhla Rajabhat University (SKRU).

Personal Intelligences Profiles refers to profiles of the particular traits or characteristics that make up the respondent's personal intelligences. In this study, the profiles were yielded by having students take the Personal Intelligence inventory (PIs inventory). They showed the level of interpersonal and intrapersonal intelligence each student possesses.

Concept-Oriented Reading Instruction (CORI) is an approach to reading focusing on reading content and building the strategic readers (Guthrie, et al., 2004). This study employed the CORI framework consisting of four phases: Observe and Personalize, Search and Retrieve, Comprehend and Integrate, and Communicate to Others, in order to foster the students' reading ability and reading engagement.

1.9 Significance of the Study

For theoretical implications, the Personal Intelligence Reading Instruction framework and the instructional model proposed in this study will have an impact on future research in reading and reading engagement. English-language teachers and researchers can further their research by replicating the model in other settings in order to confirm the validation of the framework and the model. It is expected that the findings of this study will add another key influential variable, which is reading engagement, to second-language reading development.

This study will also benefit English-language teachers and students in other EFL/ESL/EIL contexts as it suggests an instructional approach that is crucial to develop fluent and competent readers. In addition, the combination of the two

personal intelligence strategies in the lessons will provide some guidelines for teachers to foster lifelong readers as it is the ultimate goal of all reading teachers.

1.10 An Overview of the Study

This study aims to explore the impacts of PIRI on Thai university students' English reading ability and reading engagement. This chapter presents the background and statement of problems. Research questions and objectives address problems in the areas of reading instruction and reading engagement. The scope, limitations, definition of terms, and significance of the study have been explained.

Chapter 2 reviews the literature related to: Personal Intelligences, Concept-Oriented Reading Instruction, reading ability, reading strategy instruction, and reading engagement

Chapter 3 elaborates on research methodology. It explains the research design, population and sample, research instruments, instructional instruments, instrument validation, data collection and analyses.

Chapter 4 reports the findings of the three research questions. Both quantitative and qualitative data are presented.

Chapter 5 starts with a summary of the study. Findings are discussed followed by pedagogical implications for students and reading educators. The chapter ends with recommendations for future research.

CHAPTER II

LITERATURE REVIEW

This chapter outlines and elaborates on the four main concepts that underlie the framework of the study. First of all, the Multiple Intelligence (MI) theory will be introduced, followed by the concept of Personal Intelligence (PI). Research applying the theory of MI in a second/foreign language classroom will also be investigated. Next, the professional literature relevant to reading instruction, followed by the component of Concept-Oriented Reading Instruction (CORI) and reading strategies instruction will be explored. Then, both theoretical cornerstones and empirical evidence of reading ability will be described. Lastly, the importance of reading engagement will be elaborated through empirical studies that investigate reading instruction in a foreign language.

2.1 Multiple Intelligences

Gardner's groundbreaking proposal of Multiple Intelligences (MI theory) seized the attention of dozen scholars about a decade ago. He found that his own research interests led him to a heightened concern with issues of human intelligence. This concern grew out of two disparate factors: one primarily theoretical; the other largely practical. As a result of his own studies of the development and breakdown of cognitive and symbol-using capacities, Gardner (1983) convinced that the Piagetian view of intellect (Piaget, 1970) was flawed. That is, separate psychological processes appear to be involved in dealing with linguistic, numerical, pictorial, gestural, and other kinds of symbolic systems (Gardner and Wolf, 1983).

Obviously, the term "intelligence" is extended to cover many different capacities and not a single faculty, according to Gardner. He conceptualizes intelligence as "the ability to solve problems or create products that are of consequence in a particular cultural setting or community" (Gardner, 1993: 6). The MI theory offers a radically different explanation of intelligence and considers learners as different individuals possessing varying types of intelligences and learning dispositions.

Gardner (1983) firstly broke intelligence down into seven areas of intelligences: linguistic, logical, musical, kinesthetic, spatial, intrapersonal, and

interpersonal. Natural and existential intelligences were added in 1999 (Gardner, 1999).

The MI theory holds that each person possesses nine intelligences and uses them to carry different kinds of tasks. However, intelligence development depends on personal, environmental, and other factors. Consequently, the combination of intelligences in an individual and in groups is unique and mutable; human beings are all conditioned by the genetic heritage, culture, environment, and period in which they live.

According to Gardner (1999), the nine intelligences are enumerated as follow:

Verbal/Linguistic intelligence is defined as everything having to do with language, speech, reading, and writing. It is said to be the most widely shared human competence. Poets, journalists, and novelists tend to have the highest level of understanding of this intelligence. Even in deaf populations where a manual language is not explicitly taught, those children often invent their own manual language and begin to use it which is evident of strong linguistic intelligence.

Logical/Mathematical intelligence is calculating, creating hypotheses, and completing mathematical operations. It can be defined as manipulation of objects and problem solving. It is dominant in the fields of science and mathematics.

Musical intelligence involves the ability to understand pitch, rhythm, and tone as well as thinking in sound. Being able to manipulate music and combine its elements is a portion of musical intelligence.

Visual/Spatial intelligence is defined as the capacity to perceive the visual world accurately through transforming, modifying, and recreating the aspects of one's individual real world. To some, this is simply known as visual intelligence. Mental imagery, spatial reasoning, graphic skills, and imagination are all part of spatial intelligence. Spatial intelligence deals mainly with the concrete world, and is considered the ability to think in three dimensions.

Bodily/Kinesthetic intelligence is the ability to think in movement, using the ability to manipulate objects and several physical skills such as coordination, balance,

dexterity, strength, flexibility, and speed. Tactile capacities are included as well. This involves a sense of timing and perfection of skills through mind-body unison which goes further than eye-hand coordination.

Intrapersonal intelligence is defined as “knowledge of the internal aspects of a person: access to one’s own feelings about life, one’s range of emotions, the capacity to make discriminations among these emotions and eventually to label them and to draw on them as a means of understanding and guiding one’s own behavior” (Gardner, 2006: 17).

Interpersonal intelligence allows one to understand and work with others. It enables people to perceive and make distinctions in the mood, intentions, motivations, and feelings of other people.

Naturalist intelligence allows individuals to recognize and classify features of the environment, and the ability to care for, tame, or interact subtly with living creatures, or with whole ecosystems.

Existential intelligence is conceptualized as “human capacity to raise and ponder large question” (Gardner, 2006: 59). People of this style enjoy questioning, and are curious about life, death, and ultimate realities.

Many educators welcome and put Gardner’s theory of MI into experience as it clarifies a relationship between intelligence and L2 learning. That is a successful L2 learner cannot be measured or defined in terms of their linguistic and logical-mathematical only (Brown, 2007). Cambell (1997), in particular, appreciates the MI model can influence the creation and implementation of a variety of curriculums. Besides, Armstrong (2003) shows in his book how to integrate the seven intelligences to help students acquire reading and writing skills in classroom settings. Christison (2005) also claims that MI has a number of benefits. Specifically, intelligence profiles help students become aware of their learning preferences and their metacognitive skills will enhance accordingly. A host of researchers (Gardner 1993; Armstrong, 2009; Haley, 2004) note that teachers who design and organize instruction around students’ learning preferences may maximize learning opportunities for the students. One of the most cited MI inventory is Gay’s (2001) Multiple Intelligences

questionnaires (<http://www.ldrc.ca/projects/miinventory/mitest.html>). The questionnaire consists of 80 items measuring the eight types of intelligences.

In addition, there are numerous studies inspired by MI theory, giving a positive belief in students' intelligences and strength (Kornhaber, Fierros, and Veenema, 2004; Armstrong, 2009; Tanner 2001; Baum, Veins, and Slatin, 2005).

2.1.1 Personal Intelligences

Personal intelligences are more prominent among L2 researcher (Shearer, 2006; Akbari and Hosseini, 2007; Mirzaei, Domakani, and Heidari, 2013). Most of these research findings show that intrapersonal and interpersonal intelligences are the good L2 readers' most dominant intelligences, except from linguistic and logical-mathematical intelligences.

Gardner's (1983) formulation of multiple intelligences includes a pair of intra- and interpersonal intelligences to which he refers together as Personal Intelligences (PIs). Intrapersonal intelligence is defined as the development of the internal aspects of a person. It has its core "access to one's feelings about life—one's range of affection and emotion" (Gardner, 1993: 239). The second member of the pair, interpersonal intelligence, is intelligence about others. It allows individuals to cooperate in groups and be instinctively sensitive to the feeling of others. This intelligence also contains other skills more classically associated with social intelligence such as manipulating situations and motivating groups (Gardner, 1993: 239-253). Christison's (2005) defines intrapersonal intelligence as the ability to understand oneself as well as one's strengths, weaknesses, moods, desires, and intentions. This includes such skills as understanding how you are similar to or different from others, reminding yourself to do something, knowing about yourself as a language learner, and knowing how to handle your feelings. She also suggests second language teachers to develop intrapersonal intelligence in EFL learners by giving students opportunities to express their own preferences, reflect on how they participated in an activity, set goals for their own learning, and help them evaluate their own styles of learning. Interpersonal intelligence, on the other hand, is defined as the ability to understand another person's moods, feelings, motivations, and

intentions. This includes such skills as responding effectively to other people in some pragmatic way such as getting students to participate in a project, teaching each other new skills, and learning how to encourage other members of the group or team.

Furthermore, the two personal intelligences have been referred to collectively as emotional intelligence (Goleman, 1995, 1998; Salovey and Mayer, 1990). Emotional intelligence (EI) includes features of both intrapersonal and interpersonal intelligence such as self-awareness, self-motivation, and empathy.

Mayer (2008) develops a theory of personal intelligences, dividing it into areas of (a) recognizing personality-relevant information, (b) synthesizing such information into one's mental models of the self and others, (c) guiding choices with such information, and (d) systematizing one's own goals, plans, and life stories.

Foreign language learning is a complex task that is associated with anxiety and feelings of uneasiness, frustration, self-doubt and apprehension. This means the students significantly have to deal with a range of emotional tendencies. Hawkey (2006: 139) has pointed out that:

Emotionality lies at the intersection of the person and society, for all persons are jointed to their societies through the self-feelings and emotions they feel and experience on a daily basis. This is the reason the study of emotionality must occupy a central place in all the human disciplines, for to be human is to be emotional.

As a result, a consideration of emotion should be taken into account in the context of teaching and learning. According to Goleman (1995), EQ (Emotional Quotient) can be taught and developed. He suggests that EQ can predict success at school as well as or better than IQ. In the light of Gardner's personal intelligences (1983) or social intelligence, it is easy to see the involvement of emotional intelligence. EQ has its root in the concept of "social intelligence" which was first identified by Thorndike (1920). He defined social intelligence as "the ability to understand and manage men and women, boys and girls—to act wisely in human relations (Wong and Law, 2002: 245)". Salovey and Mayer (1990) were among the

earliest to propose the concept of “emotional intelligence” to represent the ability of people to deal with their emotions. They defined it as:

“...the subset of social intelligence that involves the ability to monitor one’s own and others’ feelings and emotions, to discriminate among them and to use this information to guide one’s thinking and action...” (p. 186).

In 1995, Goleman popularized a version of their construct in his book *Emotional Intelligence*. Goleman’s idea of a unitary “emotional intelligence” consisted of five domains: knowing one’s emotions, managing one’s emotions, motivating oneself, recognizing emotions in others, and handling relationships. Kelly, Longbottom, Potts, and Williamson (2004) observe that the application of EI theory in a classroom yields beneficial emotional and social changes in the class and contributes to enhance the school ethos. By cooperating social emotional learning (SEL) to typical teaching instruction, the students improve problem-solving skills and communication skills, have more involvement with peers, and have more skill in handling interpersonal problems (Goleman, 2005).

In the light of Gardner’s personal intelligences and Goleman’s emotional intelligence, it is easily seen how intelligences can be related to the concept of learning strategies. Such strategies improve foreign language learning and can foster specific aspects of the learners’ competence. It is certainly essential for students to have sufficient comprehension strategies and skills in order to understand written texts.

Effective readers use their “inner-conversation” to actively monitor their understanding and think strategically about the content, as suggested by Harvey and Goudvis (2007). The combination of the intra and inter-personal intelligences allows the readers to ask themselves whether they understand the meaning of the text what the author intends to communicate both along the way and at the conclusion of a passage.

Self-management of anxiety and problem-solving skills embodied in the intrapersonal intelligence allows readers to “stick with the process” even when obstacles are met, e.g. unknown words and complex sentences (Shearer, 2006).

Highly skilled readers have high self-other effectiveness and thus are able to achieve their goals while managing their relationships with other people. This is a powerful skill for mastering any complex skills in a social context such as the classroom or tutoring situation.

The interpersonal intelligence can be applied to reading skills in two ways. One is the ability to understand the point of view, directions, and explanations provided by the reading teacher will facilitate the development of various reading sub-skills and strategies. The other is the capacity to imaginatively place one's self in the role of the author of a text and the perspectives of characters in a story will enhance semantic understanding and textual comprehension

2.1.2 Related Research on MI and L2 Reading

Most studies report significant relationships between MI and reading comprehension. For example, Hashemi (2008) investigated the relationship between MI and reading comprehension. The participants were 122 Iranian undergraduate EFL students who were asked to take part in an IELTS test and fill out McKenzie's MI questionnaire. The finding showed that kinesthetic and verbal intelligences made the greatest contribution toward predicting reading ability scores. Besides, the findings of Razmjoo et al.'s study (2009) revealed that three vocabulary strategies, i.e. determination, social, and memory strategies have a significant relationship with several domains of MI. Interestingly, they found that linguistic and naturalistic intelligences made statistically significant contribution to the prediction of vocabulary learning knowledge.

Akbabi and Hosseini (2007) found significant positive relationships between the use of language-learning strategies and MI. The highest correlation was between metacognitive strategy use and almost all the domains of MI, followed by cognitive and memory strategies. Social strategies, on the other hand, had a low correlation with interpersonal, intrapersonal, and naturalistic intelligences. Apparently, among the types of intelligences, interpersonal and intrapersonal intelligences had a significant positive correlation with all strategy types.

Mirzaei, Domakani, and Heidari (2013)'s study also revealed that linguistic, logical-mathematical, and intrapersonal intelligences were the good L2 readers' most dominant intelligences. Furthermore, there was a significant positive relationship between linguistic, logical-mathematical, spatial, interpersonal, and intrapersonal intelligences and the use of metacognitive and cognitive reading strategies.

2.2 Reading Instruction

Reading is the ability to draw meaning from the printed page and interpret this information appropriately (Grabe and Stoller, 2011: 3). It is considered as a complex skill, as revealed by syntheses of L1 and L2 reading research (Grabe, 2009; Han and Anderson, 2009; Koda, 2005). In particular, such research have increasingly focused on comprehension skills which are the fundamental purposes for reading, but require both skills and strategies under the complexities of reading processes. Many researchers have acknowledged the important of students' reading comprehension skills to success in a variety of school subject areas as well as other achievement outcomes. What predicts the growth of reading comprehension skills is motivation (Taboda et al., 2009). Several studies have identified strong associations between motivation and reading comprehension and a number have consequently shown that motivation is a strong predictor of reading abilities (Grabe, 2009; Guthrie and Wigfield, 2000; Taboda et al., 2009). Not only can those motivational variables predict the growth of reading comprehension, but cognitive variables can also do (Klauda and Wigfield, 2012). Unfortunately, these issues are often discussed mostly in L1 reading comprehension instruction (Guthrie, 2008; Guthrie, et al., 2004; Schunk and Zimmerman, 2006). Not many L2 teachers are likely to be given much guidance on these issues (Grabe, 2009).

Motivation researchers have looked at how motivational and cognitive processes interact, and how each affects achievement outcomes (Anderman and Wolters, 2006; Wigfield et al., 2006; Wentzel and Wigfield, 2009). For example, Wigfield et al. (2006) review work showing that students with high intrinsic motivation report more frequent uses of comprehension strategies and better comprehension with science texts. Overall, motivational factors do appear to

influence reading comprehension, both directly and indirectly, and deserve serious attention for reading development.

2.2.1 Concept-Oriented Reading Instruction (CORI)

The relationship between motivation and reading in English L1 contexts has been extensively explored by Guthrie and Wigfield (2000). Over a decade, they have developed a consistent framework for reading motivation that is empirically driven, and a wide range of studies have demonstrated how instruction can improve reading motivation as well as how motivation can improve learning and reading comprehension (Guthrie et al., 2007; Guthrie and Wigfield, 2000; Guthrie, et al., 2004; Wigfield et al, 2008; Taboda et al., 2009).

Concept-Oriented Reading Instruction (CORI), developed by Guthrie and colleagues, incorporates instructional practices building motivation and also improving reading comprehension directly. It is an approach to reading focusing on reading content and building the strategic readers (Guthrie, et al., 2004). CORI instructional components constructed by Guthrie, McRae and Klauda (2007) are relevance, student choices, opportunities for success, cooperative and group activities, and thematic units that maintain coherence of content and allow for the build-up of content mastery. The instructional aspects of CORI focusing specifically on reading development comprise (a) explicit instruction in key reading strategies on a continual basis, (b) an emphasis on vocabulary development, (c) a range of materials that provide coherent content and student choice, (d) reading fluency practice, (e) time for extensive reading and (f) integrated reading-writing tasks.

2.2.1.1 CORI Instructional Components

Relevance

Relevance is an instructional practice central to CORI activities. It refers to classroom practices in which the content of instruction is linked to students' direct or recalled experience and integrated with their background knowledge (Guthrie et.al, 2007: 242). Motivational support is established by hands-on activities, relevant text, and self-referencing. Interest is the motivational process that is fueled

most obviously by relevance of literacy instruction (Guthrie, Mason-Singh, and Coddington, 2012).

Choice

Providing a choice is a motivational support system in CORI that enables student to develop self-direction in the classroom. Intrinsic motivation for reading is the central motivation process that is fostered by choices. Autonomy support is built up to affording students choices about texts, topics, partners, sequences of work, and demonstrations that they understand text (Guthrie et al., 2007: 243). This autonomy support practice enables students to experience an authentic sense of control and decision making regarding their reading activities. Under these conditions, students can exercise limited choice which enables them to be partially in control of their learning.

Success

This could be the most crucial ingredient for boosting engagement in students. Success refers to assuring that the students perform meaningful classroom tasks proficiently. The first feature of practice related to success is to provide readable texts. By readable, the students can read texts aloud with at least minimal expression, can answer simple questions, and can relate to previous texts they have read on the topic. Successful-promoting teachers also help the students set short-term goals. Determining the number of pages that the students wish to read or identifying the number of topics they wish to read in a given period of time, for instance, can build success in students' reading activities. The teacher feedback and encouragement are also vitally important for success in attaining reading goals.

Collaboration

Collaboration refers to students interacting with each other to learn. This may occur in pairs, small groups, or larger groups. Collaboration is a central process in CORI. Optimal collaborative structures consist of team accountability as well as individual accountability for successful comprehension. Feeling that they

belong to a group enables the students to undertake challenging tasks more confidently than if reading is a purely isolated endeavor (Wentzel, 2005).

Thematic units

CORI thematic practices include announcing a content theme for instruction; having a prominent guiding question; having students draw concept maps to represent a page or a chapter; and finding examples of concepts. When focusing on a theme, the students experience becoming experts on a topic.

Providing a thematic unit for the context of literacy learning is the first principle of motivation for information text comprehension (Guthrie, Mason-Singh, and Coddington, 2012). Within this context, reading strategies must be implemented. The reading strategies are cognitive competencies that enable a student to be an efficient reader. The strategies such as inferring, asking questions during reading, summarizing, and comprehension monitoring are the tools of comprehension. In CORI, reading strategies are the means to the end of understanding information book and literature on the theme.

2.2.1.2 CORI Framework

Guthrie and his colleagues (2004) mentioned that the CORI framework consisted of four phases which employed five instructional practices discussed earlier. Observe and Personalize, Search and Retrieve, Comprehend and Integrate, and lastly Communicate to Others were constructed in order to foster long-term reading ability and reading engagement. Below are explanations of the four phases of CORI (Guthrie, Bennett, and McGough, 1994; Wigfield and Guthrie, 1997; Guthrie et al., 2004; Swan, 2003).

- *Observe and Personalize*: The teacher provides student an opportunity to observe a phenomenon and personalize their learning about it. Hands-on activity is used in order to pique students' interest and motivation, and to set the stage for reading as the students want to "do it for its own sake." During and following observation, the teacher encourages questioning. Then personal

questions become goals for learning, and these personal goals help motivate the reading activities.

- *Search and Retrieve*: It is during this phase that the students are taught where to look for information to answer their questions and how to access and utilize the information once it has been discovered.
- *Comprehend and Integrate*: Teachers will incorporate strategies such as scaffolding, organizing ideas, summarizing, and questioning the text during this phase. The students will activate prior knowledge, make connections with the text, strengthen their vocabulary, create visual imagery, and make inferences related to the text. As a result of these interactions, the students will learn to synthesize the information gathered from a variety of sources.
- *Communicate to Others*: It is during this particular phase that the students will design and create a method for sharing the information learned in a meaningful manner. This might involve peer teaching, creating a video, making an informational poster, making a public service announcement, and writing a story book of their own, just to name a few examples of ways in which students can communicate collaboratively to others the information they have uncovered.

2.2.1.3 Related Research on CORI

Many experimental studies evaluating the effectiveness of CORI were conducted for years (Guthrie, McRae and Klauda, 2007; Guthrie, Wigfield, and Perencevich, 2004; Guthrie et al., 2007; Guthrie, Klauda, and Morrison, 2012; Wigfield et al., 2008; Guthrie, Wigfield, and You, 2012). These research studies provide strong evidence for the impact of the CORI approach on motivation and reading comprehension.

Wigfield et al. (2008) investigated the CORI instructional effects on elementary students' reading comprehension and reading engagement. The findings

indicated that CORI improved the students' reading comprehension to the extent that it increased the students' engagement processes in reading.

Guthrie, Klauda, and Morrison (2012) investigated the effects of CORI on motivation and reading achievement among young adolescents. They conducted extensive interviews and followed up with questionnaires, cognitive assessments, and instruction targeted to increase reading engagement.

Guthrie, Wigfield, and Perencevich (2004) examined how CORI influenced third-, fourth-, fifth-, and seventh-grade students' reading comprehension and engagement in reading. CORI increased intrinsic motivation, self-efficacy, social motivation, and valuing for reading.

2.2.2 Reading Strategies Instruction

The research on comprehension among English speakers show reading strategies such as asking questions while reading, making predictions, summarizing, and monitoring comprehension improve reading comprehension. Burgeoning body of research reviews provided substantial evidence that explicit comprehension instruction improved students' understanding of texts they read in school (Block and Pressley, 2002; Block, Gambrell, and Pressley, 2002; Ruddell and Unrau, 2004). When researchers explicitly taught the students these comprehension-fostering strategies, students not only learned to apply these strategies, but the instruction had positive effects on students' general comprehension as well.

The research on reading strategies in L2 contexts are surprisingly limited; despite many discussions of the importance of reading strategies improve students' reading abilities. There have been only ten reasonably well-controlled published studies that have examined the relationship between reading strategies training and reading comprehension development since 2006. Taylor, Stevens, and Asher (2006) reviewed the existing empirical research in L2 reading strategy training: 10 published studies and 12 dissertations and they subsequently concluded that a low to moderate effect exists between strategy training and L2 reading comprehension improvement.

Recently, many educators and researchers have been interested in developing readers' cognitive process combined reading strategies with metacognitive strategies

(Chamot, 2005; Zhang and Seepho, 2013; Baker, 2008; Macaro and Erler, 2008). According to these scholars, metacognitive strategies such as self-monitoring and self-regulating activities are those strategies designed to increase readers' awareness of whether or not they can comprehend what they read. The use of metacognitive strategies in the reading process, therefore, is considered as a valuable aid for its cognitive, social, and linguistic benefits.

Grabe and Stoller (2011: 143) identified nine strategies that played a major role in the monitoring of comprehension as listed in Table 2.1.

Table 2.1 Comprehension Monitoring Strategies

When monitoring for comprehension, the reader:
1. has a reason for reading and is aware of it
2. recognizes text structure
3. identifies important and main-idea information
4. relates text to background knowledge
5. recognizes relevance of text to reading goal (s)
6. recognizes and attends to difficulties
7. reads carefully
8. reread as appropriate
9. clarifies misunderstandings

The teachers can support reading comprehension development and comprehension monitoring by modeling these strategies, discussing them, and guiding the students to use them.

Additionally, Pressley (cited in Grabe 2011: 146) provides a summary of strategies used by good readers while reading for careful comprehension as outlined in Table 2.2.

Table 2.2 Strategies Employed by Good Readers

Good Readers:

1. plan and form goals before reading
 2. form predictions before reading
 3. read selectively according to goals
 4. reread as appropriate
 5. monitor their reading continuously
 6. identify important information
 7. try to fill gaps in the text through inferences and prior knowledge
 8. make guesses about unknown words to keep reading
 9. use text structure information to guide understanding
 10. attempt to integrate ideas from different parts of the text
 11. build interpretations of the text as they read
 12. build main-idea summaries
 13. evaluate the text and the author, and form feeling about the text
 14. attempt to resolve difficulties
 15. reflect on the information in the text
-

Goals for development of strategic reading, accordingly, should include (a) student use of multiple strategies in combination for better comprehension and (b) student familiarity with strategic responses to texts which, with practice and teacher reinforcement, become more automatic (Grabe and Stoller, 2011: 147).

In addition, according to Oxford's (2011) language learning strategies, one sub-category of the indirect strategies that support and manage language learning is social strategies. Since language is a form of social behavior, i.e. communication, it definitely occurs between and among people. Learning a language thus involves other people, and appropriate social strategies are very important in this process.

Three sets of social strategies which each set comprises two specific strategies are included: Asking Questions, Cooperating with Others, and Empathizing with Others. These are presented in Figure 2.1.

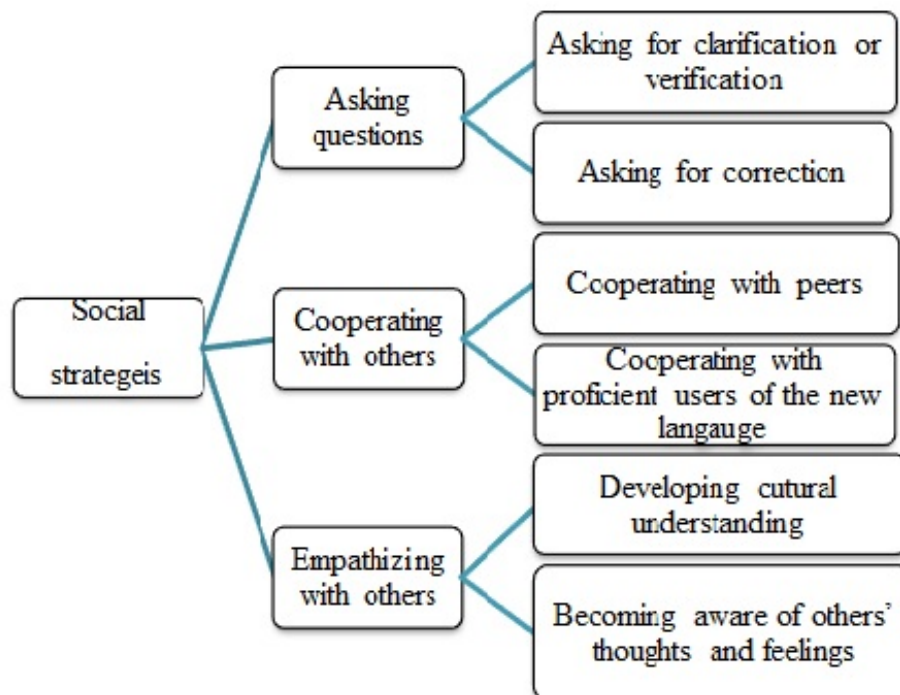


Figure 2.1 Social Strategies

The learners ask questions to get closer to the intended meaning and thus aid their understanding. It also helps them encourage their conversation partners to provide larger quantities of input in the target language and indicates interest and involvement. Moreover, the conversation partner's response to the learner's question indicates whether the question itself is understood; therefore providing indirect feedback about the learner's production skills.

Apart from asking questions, the engaged readers connect their reading with their friendships. With regard to motivation theories, socialization seems to stimulate readers' enjoyment of reading activities. Friend support uniquely predicts information book reading and forms of reading especially appropriate for fulfilling knowledge goals (Klauda and Wigfield, 2012).

Another essential component of social strategies is empathy. This strategy can foster learning atmosphere conducive for successful communication in any languages although learning another new language is sometimes quite difficult. Empathy involves the ability to put yourself in someone else's shoes in order to better

understand that person's perspective. Generally, people differ in their natural ability to feel and demonstrate empathy. However, social strategies can help all learners increase ability to empathize by developing cultural understanding and becoming aware of others' thoughts and feelings.

Another model regarding the importance of social factors in reading is the reading engagement model (Guthrie and Wigfield, 2000; Guthrie et al., 2004) that emphasizes social interaction in reading as one of four defining characteristics of engaged readers, along with cognitive, behavioral, and emotional engagement in literacy tasks. In other words, this model inquires with whom the readers interact with when reading and how these interactions relate to their reading motivation and activity.

All of these strategies should be incorporated in well-structured reading lessons. Reading teachers often structure their reading lessons, interpreted broadly, around three well-defined stages, namely the pre-reading, during-reading also referred to as while-reading or guided reading, and post-reading or after-reading stages (Hedgcock and Ferris, 2009; Laverick, 2002). The amount of class time devoted to each stage is highly variable, depending on instructional goals, student reading proficiencies, length of class meeting and texts assigned (Grabe and Stoller, 2011). These stages go along with Cohen's (2011) metacognitive strategies that deal with "pre-assessment and preplanning, planning and monitoring, and post-evaluation of learning activities and of language events" (Cohen, 2011: 19).

Grabe and Stoller (2011: 249) also summarized a distinct set of instructional purposes of each stage as illustrated in Table 2.3.

Table 2.3 Major Goals at Each Stage of the Pre-During-Post Framework

Pre-reading Stage	During-reading Stage	Post-reading Stage
<ul style="list-style-type: none"> • Establish reading purpose • Tap prior knowledge • Provide information needed for comprehension (e.g. vocabulary, background) • Set up expectations • Stimulate interest • Build confidence and motivation • Explain or support text organization • Model common strategies used at this stage 	<ul style="list-style-type: none"> • Guide reading to facilitate comprehension • Help students construct meaning and monitor comprehension • Give students opportunities to connect what is read with what is known; to evaluate what is being read • Provide opportunities for fluency development • Support ongoing summarization • Model common strategies used at this stage 	<ul style="list-style-type: none"> • Check comprehension • Explore how text organization supports comprehension • Consolidate learning • Provide opportunities for students to summarize, synthesize, integrate, extend and apply text information • Give students the chance to critique the author and aspects of the text (e.g. writing, content) • Establish and recognize comprehension successes • Model common strategies used at this stage

Grabe and Stoller (2011: 133) also provided sample activities used in different stages of a reading lesson as described in Table 2.4.

Table 2.4 Sample Activities Used in Different Stages of a Reading Lesson

Reading Lesson Stage	Example Activities
Pre-reading	Presenting key vocabulary, identifying main themes in the reading, predicting information in the text, tapping appropriate background knowledge, making connections between new and known information
During-reading	Examining a difficult paragraph, confirming predictions, clarifying comprehension, guessing new word meanings
Post-reading	Summarizing, evaluating, confirming predictions, sorting, building vocabulary knowledge, highlighting key information

2.2.2.1 Pre-reading Activities

The pre-reading activities are to tap students' prior knowledge, provide information that the students are not likely to have but need to comprehend the text, build up the student expectations and stimulate the student interest in the topic. Koda (2007) has asserted that successful comprehension is achieved through the integrative interaction of extracted text information and a reader's background knowledge. Empirical evidence demonstrates that background knowledge is a major factor in the reading comprehension process (Long, Johns, and Morris, 2006; Rapp et al., 2007; Zwaan and Rapp, 2006; Stanovich, 2000). Background knowledge is just another way to describe the information stored in our memory systems, and reading comprehension is basically a combination of text input, appropriate cognitive processes, and the already known information (Grabe, 2009). There is no debate that

the readers with considerably more background knowledge on a topic read a text differently and more efficiently.

Apart from activating readers' schemata, using preview question; pre-teaching vocabulary; attending to pictures; graphics and headers; and using semantic mapping activities are commonly introduced as pre-reading activities (Grabe and Stoller, 2011).

2.2.2.2 While-reading Activities

Most textbooks include pre- and post-reading tasks, but few explicitly guide students in the during-reading stage (Hedgcock and Ferris, 2009; Hudson, 2007). The instructions are commonly given immediately after the pre-reading tasks in order to simply direct students to read the passage.

The teacher initially provides sufficient instructional supports to ensure that the students are learning to use reading strategies effectively. For example, in learning to use comprehension monitoring for reading, the students often require extensive information about how to identify a reading problem and a solution to a particular problem. The teachers can provide the students with a reading problem list, including many solutions from which the students can choose. Later, when the students have gained more skills in identifying the reading problems and solutions, the teacher begins to ask them individually in order to check if they really recognize their reading problems.

2.2.2.3 Post-reading Activities

Post reading comprehension activities are typically used to check readers' text comprehension (Nation, 2009). Commonly seen in textbooks are comprehension checks of various types, including WH, yes/no and true/false question; multiple-choice and sentence-completion tasks; and information-transfer activities. The emphases of such activities shift from literal comprehension, often the least challenging, to drawing inferences, using the text for other purposes, and critically evaluating the text, the latter often being the most challenging (Day and Park 2005). Furthermore, the students can design and create a method for sharing the information learned by peer teaching, creating a poster, or making a public service announcement.

Nation (2009) provided briefs descriptors of post-reading comprehension task types as illustrated in Table 2.5.

Table 2.5 Brief Descriptors of Post-reading Comprehension Task Types

Degree of Challenge	Least Challenging	Emphasis of Comprehension Activity	Brief Description
		Literal comprehension	Understanding what the text explicitly says
		Drawing inferences	Reading between the lines; using text information that is not explicitly stated but which can be justified by reference to the text
	Most Challenging	Using the text for other purposes	Applying information in the text to some problems, reflect on personal experiences, compare with ideas from other sources, extend information beyond the text
		Responding critically	Evaluating adequacy of content, quality of evidence, author bias, quality of expression, agreement or disagreement with ideas in the text, satisfaction or dissatisfaction with the text

As it has been noted, the lesson framework of pre-, during- and post-reading portrays an active, dynamic process in which learners select information from their environment, organize the information and relate it to what they already know, retain what they consider to be important, use the information in appropriate contexts, and reflect on the success of their learning efforts. Through repeated efforts to apply the strategies with various learning materials, the individual can gradually proceduralize or learn to use the PI automatically so that it functions rapidly and without errors with specific tasks.

2.2.2.4 Related Research on Reading Strategies Instruction

In spite of many discussions of the importance of reading strategies to enhance the students' reading abilities, surprisingly, research on reading strategies in L2 context seems to be limited (Grabe and Stoller, 2011). The research found in the past decade, were explored and classified into six personal intelligence strategies employed in this study.

Goal Setting

Goal setting is one of the cognitive processes that is central to all human activity and is driven by attended processing (Grabe, 2009). Goals provide reasons for actions and provide causal explanations for what other people are doing or what they want to see it is done. In academic settings, readers read with a variety of goals and make plans for how to achieve these goals. Goals can range from basic comprehension of text information such as carrying out simple tasks as part of functional literacy skills, e.g. finding simple information, checking facts, entertaining oneself, and etc. to advanced academic goals that may involve critically interpreting texts in the light of an array of other information and using critical interpretation for other academic tasks, e.g. summarizing a text, synthesizing multiple sources of information, evaluating information, forming an argument, preparing for a test, studying to learn, and etc.

Attention to goals generally has a positive influence on comprehension. Based on goals, readers will decide what information to focus their attention on. They will decide the level of intensity of their efforts and set an appropriate expectation for their comprehension that will help them achieve their goals. The research on goal setting and comprehension outcomes based on different goals assert that goals can impact comprehension outcomes in both L1 and L2 contexts (Horiba, 2000; Linderholm and van den Broek, 2002; Linderholm et al., 2004; Perfetti, Landi, and Oakhill, 2005). Schunk and Zimmerman (2007) also extend prior research on setting reading goals by claiming that learning to set realistic goals during reading and evaluate their progress increases achievement in reading tasks.

Monitoring

Reading cannot be successful without comprehension. Comprehension is a complex, dynamic process in which the reader plays an active role to construct meaning from the text by using available skills and strategies (Block, 2004). In the process of meaning construction, comprehension monitoring is an important factor as it enables readers to keep track of what they are reading in order to make sure it makes sense (Grabe and Stoller, 2011).

Comprehension monitoring has also often been identified as a major metacognitive process. It is the process by which “an individual evaluates the state of his/her understanding of information” (Oakhill, Hartt, and Samols, 2005: 658), and it “directs the reader’s cognitive processes as he/she strives to make sense of incoming textual information” (Wagoner, 1983: 328). It is the awareness of whether comprehension is occurring and the conscious application of appropriate strategies to correct comprehension (Zipke, 2007).

Evaluation

Evaluating is a reading strategy performed after reading. Readers give their opinions and comments, recognize alternative views, and offer rational positions concerning the text. This technique helps the readers check and evaluate the accuracy of their understanding, recheck what they are confused about, and find solutions to solve the problems (Collin and Cheek, 1993). It is now widely accepted that self-assessment is a successful attempt for assessing the learning process and locating personal profile matched or miss-matched stance (McNamara, 2000). Second language learners are actively involved in metacognition when they attempt to evaluate whether what they are doing is effective. Teachers can help students debrief the reading activity by evaluating the effectiveness of the strategies that they have used during the task. In doing so, the learners are allowed to reflect through the cycle of learning.

Sensing Others' Feeling

Learners can purposefully become aware of fluctuations in the thoughts and feelings of particular people who use a new language. Such awareness brings the learners closer to the people they encounter, helps them understand more clearly what is communicated, and suggests what to say and do. Specifically, in reading instruction, the students can sense the feelings of people with whom they communicate informally through letters, notes, or memos. Formal writing like novels, stories, and articles can be understood more easily when the learners consciously try to get inside the skin of the writer to understand the writer's point of view (Oxford, 2011). Jerome Bruner (1986) was one of the first psychologists to propose that narrative was a distinctive mode of thought, specifically oriented around human beings, their intentions and their interactions.

Collaboration

Many studies have examined various forms of cooperative learning. One of the most widely used cooperative approaches for teaching literacy skills is Collaborative Strategic Reading, or CSR (Klingner and Vaughn, 1999). CSR was developed to combine typical cooperative learning structures with instruction in reading comprehension strategies; in CSR classrooms, "students work in small cooperative groups to assist one another in applying four reading strategies that facilitate their comprehension of content area text" (Klinger and Vaughn, 1999: 739). CSR has been used with both L1 and L2 students. This approach is particularly interesting from an L2 standpoint because it has been effective with struggling readers, including language-minority students (Grabe, 2009).

Exchanging Explanations

According to Anderson et al. (2001: 2), "thinkers must hear several voices within their own heads representing different perspectives on the issue". The ability and disposition to take more than one perspective arise from participating in discussions with others who hold different perspectives. The theoretical rationales invoke to explain the role of discussion in promoting students' reading comprehension largely derive from socio-cognitive and socio-cultural theories.

According to Piaget (1952), social interaction is a primary means of promoting individual reasoning. Similarly, Vygotsky (1986) conceived of learning as a culturally embedded and socially mediated process in which discourse play a primary role in the creation and acquisition of shared meaning making. Essentially, he conceptualized reading and writing as socially constructed higher order psychological processes. Within such a perspective, children develop reading skills and abilities through authentic participation in a literacy-rich environment and are apprenticed into literate community by more knowledgeable others, for instance, parents, teachers, or more capable peers.

When the students interact with others in a group in deep and meaningful ways, the produced outcomes or results are beyond the abilities and dispositions of the individual students who compose the group (Murphy et al., 2009). The students bring to the discussion unique social and cultural values, background experiences, and prior knowledge and assumptions. Through the interactions, the learners incorporate ways of thinking and behaving that foster the knowledge, skills, and dispositions needed to support transfer to other situations that require independent problem solving (Anderson et al., 2001; Hatona, 1993). In the context of discussion, the students make public their perspectives on issues arising from the text, consider alternative perspectives proposed by peers, and attempt to reconcile conflicts among opposing points of view.

Collaborative Reasoning (CR) (Anderson et al., 1998) is one of the discussion approaches promoting students' higher-level thinking and comprehension of text. CR uses discussion to foster students' critical reading and thinking about text as part of reading instruction. CR discussions also reinforce conversations among students that draw on personal experiences, background knowledge, and text for interpretive support.

2.3 Reading Ability

Reading ability generally covers comprehension skills, strategies and knowledge resources available to the readers (Grabe and Stoller, 2011). Some of the key components of comprehension include decoding skills, vocabulary knowledge, grammar knowledge, world knowledge, short-term memory, and inferential

knowledge. Grabe and Stoller (2011) outline the way that reading comprehension processes are likely to work for fluent readers by dividing the explanation into two parts: lower-level processes and higher-level processes. The lower-level processes represent the more automatic linguistic processes and are typically viewed as more skill-oriented. The higher-level processes generally represent comprehension, involving interpretation of the texts, combination of reading strategies, making inferences and drawing extensively on background knowledge. Table 2.6 shows the two classes of common underlying processes as aspect of working memory processing, according to Grabe and Stoller (2011: 14).

Table 2.6 Working Memory Processes for Reading

Lower-Level Processes	Higher-Level Processes
<ul style="list-style-type: none"> • Lexical access 	<ul style="list-style-type: none"> • Text model of comprehension
<ul style="list-style-type: none"> • Syntactic parsing 	<ul style="list-style-type: none"> • Situation model of reader interpretation
<ul style="list-style-type: none"> • Semantic proposition formation 	<ul style="list-style-type: none"> • Background knowledge use and inferencing
	<ul style="list-style-type: none"> • Executive control processes

Lower-level Processes

The most fundamental requirement for fluent reading comprehension is rapid and automatic word recognition or the calling up of the meaning of a word as it is recognized. These skills are difficult to develop without exposure to print through many hours of reading practice. Fluent L1 readers can recognize almost all of the words they encounter, at least at some basic meaning level.

Word recognition abilities have been explored extensively by many L1 researchers. In L2 reading contexts, on the other hand, much less discussion is devoted to this topic (Birch, 2007). It is due to the tremendous difficulties involved in providing the L2 students with time, resource, and practice needed to develop a very large recognition vocabulary.

Higher-level Processes

The higher-level processes more closely represent what we typically think of as reading comprehension. As good readers, they form a summary model of what the text is likely to mean. They also construct a more elaborated interpretation, establish purposes of reading, draw on background knowledge, monitor comprehension, form attitudes about the text and critically evaluate the information being read.

In sum, the lower-level and the higher-level processes are components of able readers, which help them to cope with reading effectively. These two levels of reading abilities are consistent with skills of fluent readers including recalling word meanings, drawing inferences about the meaning of a word in context, finding answers to questions answered explicitly or in paraphrase, weaving together ideas in the content, drawing inferences from the content, recognizing a writer's purpose, attitude, tone and mood, identifying a writer's technique, and following the structure of a passage.

With this knowledge of proficient reading processes, the teacher should explicitly encourage the readers' active involvement in terms of both linguistic and cognitive interactions with texts.

2.3.1 Related Research on Reading Ability

The use of questions is one of common types of reading task. Reading questions can encourage the students to regard reading as a means to look for answers; function to direct the students' attention to the important aspects of the text (Nuttall, 2005). Reading questions can be categorized according to the degree of cognitive activity that they encourage, the type of reading skills that they require, the levels of comprehension that they promote, and the degree of reading proficiency that they demand (Day and Park, 2005; Nuttall, 2005). Table 2.7 depicts taxonomy into which reading questions have been categorized by Day and Park (2005) and Nuttall (2005).

Table 2.7 Taxonomy of Types and Content of Reading Questions

Categories of Questions	Reading Skills	Reading Abilities
Lower-order questions	Type 1 (Nuttall, 2005) Literal (Day and Park, 2005)	Read the lines
Higher-order questions	Types 2 and 3 (Nuttall, 2005) Reorganization and Inference (Day and Park, 2005)	Read between the lines
	Types 4, 5, and 6 (Nuttall, 2005) Prediction, Evaluation, and Personal response (Day and Park, 2005)	Read beyond the lines

Nuttall (2005) proposes a taxonomy of questions that comprises six categories as follows:

Type 1 Questions of literal comprehension

These questions are the same as the lower-order questions. It demands the recognition or recall of factual information explicitly stated in the text.

Type 2 Questions involving reorganization or reinterpretation

Reinterpretation is required in this type of question. They require readers to read between the lines or beyond the lines. The readers need to obtain bits and pieces of surface information from different parts of the text and put them together in a new way.

Type 3 Questions of inference

The questions are considered as more cognitively challenging than the first two question types. The readers need to understand the text well enough to make logical and conceptual inferences.

Type 4 Questions of evaluation

Evaluative questions ask the readers to make a considered judgment about the text in terms of what the author is trying to do and how well they have achieved it.

Type 5 Questions of personal response

These questions ask for a personal reaction based on the text. The questions depend least on the writer. Sometimes they overlap with the fourth type.

Type 6 Questions concerned with how writers say what they mean

Type 6 Questions ask for the reader's opinion about the author's way of expressing ideas and organizing the text.

Nuttall (2005) stated that Type 1 Questions were mainly found in second or foreign language textbooks with a few Type 2 and 5 questions. Accordingly, she suggested that the questions of personal response to what the writer said in a text should be employed more frequently.

Day and Park (2005) also found that the students tended to perform well on the types of comprehension questions that had been repeatedly used by their teachers. Therefore, they suggested that the teacher should teach the students how to go beyond a literal level of understanding and provide them opportunities to engage with all six types of comprehension questions. However, it was not stated clearly that which proficiency level of the students should be given which types of comprehension questions, and to what degree students would be able to develop their reading abilities if an emphasis was placed on higher-order questions.

2.4 Reading Engagement

According to Skinner et al. (2009), engagement is a reflection or manifestation of motivated action and they note that the action incorporates emotions, attention, goals, and other psychological processes along with persistent and effortful behavior. Thus, reading engagement is defined as interacting with text in ways that are both strategic and motivated (Guthrie and Wigfield, 2009). The engaged readers, therefore, are motivated to read, strategic in their approaches to comprehend what they read,

knowledgeable in their construction of meaning from text, and socially interactive while reading (Guthrie et al., 2004; Guthrie, Wigfield, and You, 2012). Several dimensions of engagement have been proposed by Fredricks et al. (2004) as behavioral, emotional, and cognitive engagement.

Behavioral engagement is direct involvement in a set of activities and includes positive conduct, effort and persistence, and participation in extracurricular activities. Emotional engagement covers both positive and negative affective reactions, e.g. interest, boredom, anxiety, frustration to activities as well as to individuals with whom they do the activities, namely teachers and peers. It also comprises identification with school.

Cognitive engagement means willingness to exert the mental effort needed to comprehend challenging concepts and accomplish difficult tasks in different domains as well as the use of self-regulatory and other strategies to guide one's cognitive efforts. In addition, Guthrie et al. (2004) also posit that social interaction in reading is one of four defining characteristics of engaged readers, along with cognitive, behavioral, and emotional involvement in literacy activities. Klauda and Wigfield (2012) conducted a research concerning parent and friend support for recreational reading with children's reading motivation. The results showed that the children perceived greater reading support from their mothers than from their fathers or friends.

Many research studies point out that achievement and engagement are reciprocal (Swan, 2003; Guthrie et al., 2004, 2008; Grabe, 2009; Guthrie and Wigfield, 2000; Wentzel, 2009; Guthrie, Klauda, and N. Ho, 2013). That is, reading achievement is a byproduct of students' engagement. As students encounter and digest books, their competence in reading grows. Engaged readers become facile in all the cognitive systems of word recognition, sentence processing, paragraph structuring, and integrating new information with prior knowledge (Grabe and Stoller, 2011).

Guthrie et al. (2004) investigated the relationship between reading outcomes and reading engagement of third-grade children by implementing CORI. The findings indicated that the students in CORI classrooms were higher than those in the Strategy Instruction (SI) and traditional instruction groups (TI) on measures of reading comprehension, reading motivation, and reading strategies.

Guthrie, Klauda, and N. Ho (2013) also emphasize the interrelationships of reading instruction, motivation, engagement, and achievement. They conducted the study with 1, 159 seventh graders. CORI was implemented for six weeks. The results showed that CORI directly predicted several motivations, engagement, and achievement.

The above information was taken into account in conducting strategic reading instruction in the present study.

2.4.1 Related Research on Reading Engagement

Frederick, Blumenfeld, and Paris (2004) propose that engagement is a multidimensional attribute including behavioral engagement, cognitive engagement, and emotional engagement. The measures of reading engagement and reading motivation tended to go together as motivation is one of engagement construct. Reading Engagement Index was mainly employed to measure the extent to which each student was an engaged reader within the classroom, according to the teacher's perception. Cronbach's alpha reliability of all eight items is 0.92 (Wigfield et al., 2008) which seems to be reliable to use as one of engagement research instruments. Wigfield and colleagues (2008) also employed REI to explore students' engagement processes in reading.

Reading engagement research has been done mainly with elementary, middle, or secondary school students. Studies on reading engagement of students in tertiary level were limited.

2.5 Chapter Summary

The review of literature has illustrated the theoretical perspective of personal intelligences—intrapersonal and interpersonal. Intrapersonal intelligence involves an examination and knowledge of one's own feeling, motivation, and behavior. Interpersonal intelligence includes an ability to interpret and understand others. The theory is that using one's strongest intelligences will not only hold the reader's interest, but also promote greater cognitive engagement with specific tasks of reading, e.g. word recognition and meaning, understanding content, self-questioning, and monitoring comprehension. Such a "personalized" approach to reading instruction is

quite effective for situations where time and resources permit a close and creative encounter between the readers and instructor.

Concept-Oriented Reading Instruction (CORI) promotes reading ability, engagement, and motivation to read. Moreover, the engagement has been found to be critical variable in reading achievement. Better readers tend to read more because they are more motivated to read which, in turn, leads to improve vocabulary and comprehension skills. The engagement in reading is thus a predictor of learning success throughout life. Building from an engagement perspective, four phases of teaching, *Observe and Personalize*, *Search and Retrieve*, *Comprehend and Integrate*, and *Communicate to Others* are used as teaching procedures in this study.

Reading comprehension requires readers be more in terms of metacognitive while they are reading. The review of literature on reading strategy instruction and reading ability provides useful guidelines for reading instruction and activities used in this study.

CHAPTER III

RESEARCH METHODOLOGY

This chapter outlines the information in regards to the methodological aspect of research study. It is divided in to two sections. One section is related to the research design; the second part involves a description of Personal Intelligence (PI) that is included in the reading intervention along with the rationale and theoretical framework used for instructional design purposes.

3.1 Research Design

A one-group pre-test-post-test design, in which a single group is measured or observed not only after being exposed to a treatment of some sort, but also before (Wasanasomsithi, 2004), was used to investigate the explicit use of the PIRI on the English reading ability, reading engagement, and Personal Intelligence profiles. A diagram of this design is shown below.

Table 3.1 One-Group Pre-Test-Post-Test Design

O ₁	X	O ₂
Pretest	Treatment	Post-test

From Table 3.1, O₁ represents three pre-tests: English Reading Ability pre-test, Reading Engagement Index pre-test, and Personal Intelligence inventory pre-test. The pre-test scores were used for later comparison with the scores from the three identical post-tests represented here as O₂.

X represents the Personal Intelligence Reading Instruction (PIRI). During the 10-week intervention, the students were exposed to both intra- and inter-personal skills embedded in the six reading practices designed to support reading awareness. These practices were designed to promote students' reading strategies for processing texts, ability to monitor comprehension, and ability to adjust strategies as needed.

3.2 Population and Samples

The population of this study was undergraduate students enrolling in a Paragraph Reading Strategies course (1551103) at Songkhla Rajabhat University. The samples consisted of 39 first-year students majoring in English who enrolled in Paragraph Reading Strategies class at SKRU. This type of sample is often referred to as a convenience sample because the participants are readily available (Creswell, 2003).

Three students were selected and videotaped in Weeks 3, 6, and 9. The criterion for selection was based on their scores on REI. The students were in the top 5% of the high-engaged students. The students were rated according to the teacher's reading engagement checklist. Figure 3.1 illustrates the population and samples of the study.

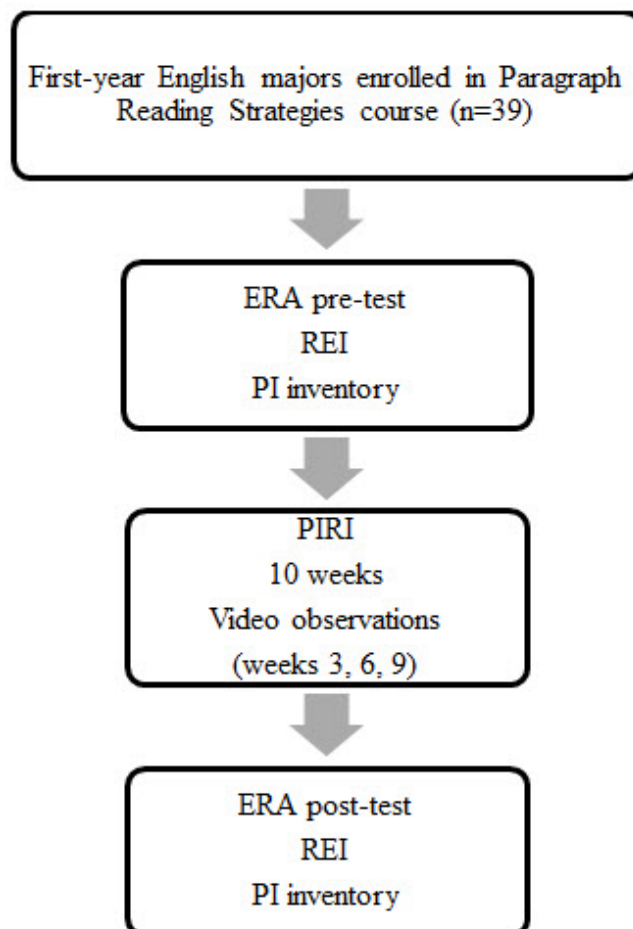


Figure 3.1 Population and Samples

3.3 Research Instruments

The study utilized six research instruments: (1) English Reading Ability Test (the ERA Test) (2) reading engagement checklist (3) Reading Engagement Index (REI) (4) Personal Intelligence inventory (PI inventory) (5) classroom observation form and (6) student worksheets. These instruments were discussed in two sections: 1) the description of research instruments, and 2) research instrument validation.

3.3.1 Descriptions of Research Instruments

Table 3.2 presents six research instruments employed in this study in order to investigate the students' English reading ability, reading engagement, and Personal Intelligence profiles.

Table 3.2 Research Instruments

Objectives	Instruments	Distribution	Data analysis
Research question 1: To examine the effects of PIRI on students' English reading ability	1. English Reading Ability Test	Before and after the treatment	- Paired samples t-test, - Cohen's <i>d</i>
Research question 2: To examine the effects of PIRI on students' levels of reading engagement	2. REI	2. Before and after the treatment	- Descriptive statistics
	Reading engagement checklist	During the treatment (weeks 3, 6, 9)	- Descriptive statistics - Content analysis

Table 3.2 Research Instruments

Objectives	Instruments	Distribution	Data analysis
Research question 3: To examine the effects of PIRI on students' PIs profiles.	3. Personal Intelligences inventory	3. Before and after the treatment	- Descriptive statistics
	Classroom observation	During the treatment (weeks 3, 6, 9)	- Content analysis
	Student worksheets	During the treatment (weeks 3, 6, 9)	- Content analysis

3.3.1.1 English Reading Ability Test (the ERA Test)

The ERA Test was constructed to assess the students' English reading ability before and after the implementation of PIRI. It was developed based on Bachman and Palmer's (2000) language test development and guidelines for designing multiple-choice items for classroom-based situations (Brown, 2004).

Five types of comprehension according to Nuttall's types of question of reading comprehension were adopted. The questions include: (a) literal comprehension; (b) reorganization or reinterpretation; (c) inference; (d) evaluation; and (e) word-attack and text-attack skills (Nuttall, 2005).

The ERA test consists of 4 reading passages, totaling 21 multiple-choices items. The passages used in the test are extracts of such real-world sources as journals and magazines. These extracts are related to the reading topics of food, health, and technology. The length of these four passages is between 300-450 words (see Appendix A).

The test was first sent to three experts for the verification of content validity. They rated the test based on the Item-Objective Congruence (IOC) Index by

assigning scores to the items as: 1 = Congruence, 0 = Questionable, and -1 = Incongruent. Items that had an index lower than 0.50 were revised according to the suggestions from the experts.

As shown in Table 3.3, the mean scores of twenty-one items from the three experts were above 0.50, and only Question 18 was needed to be revised. Expert A suggested the answer c, “A contrast between the eye balls’ movement of and lenses” was not clear enough, so the researcher rephrased the answer to “Two movements: eyeballs and lenses cause a problem.”

After the researcher revised the ERA Test, it was pilot-tested with 30 SKRU undergraduate students enrolling English for Communication and Study Skills course in April 2011. From the calculation of Kuder-Richardson Formula 20 (KR-20), the reliability coefficient of the ERT Test is 0.68, indicating that the test is reliable and appropriate for the study.

Table 3.3 Results Obtained from the ERA Test Evaluation Form

Item	Type of comprehension	Expert			Total	Meaning
		A	B	C		
1	Inference	1	1	1	1	Reserved
2	Reinterpretation	1	1	1	1	Reserved
3	Inference	1	1	1	1	Reserved
4	Literal comprehension	1	1	1	1	Reserved
5	Literal comprehension	1	1	1	1	Reserved
6	Word-attack skill	1	1	1	1	Reserved
7	Reinterpretation	1	1	1	1	Reserved
8	Evaluation	1	1	1	1	Reserved
9	Reinterpretation	1	1	1	1	Reserved
10	Literal comprehension	1	1	1	1	Reserved
11	Word-attack skill	1	1	1	1	Reserved
12	Literal comprehension	1	1	1	1	Reserved
13	Inference	1	1	1	1	Reserved
14	Text-attack skill	1	1	1	1	Reserved

Table 3.3 Results Obtained from the ERA Test Evaluation Form

Item	Type of comprehension	Expert			Total	Meaning
		A	B	C		
15	Literal comprehension	1	1	1	1	Reserved
16	Word-attack skill	1	1	1	1	Reserved
17	Evaluation	1	1	1	1	Reserved
18	Literal comprehension	0	1	1	0.66	Reserved
19	Inference	1	1	1	1	Reserved
20	Text-attack skill	1	1	1	1	Reserved
21	Evaluation	1	1	1	1	Reserved

An identical form was administered as the English reading ability pre- and post-tests, and mean scores and standard deviation were used to calculate dependent samples t-test to study changes in the students' English reading ability.

3.3.1.2 Reading Engagement Index (REI)

The Reading Engagement Index addressed the rating of the extent to which each student is an engaged reader before and after receiving Personal Intelligence Reading Instruction (PIRI). It was adapted from the Reading Engagement Index (REI) developed by John Guthrie and colleagues as an outcome measure of examining the effectiveness of Concept-Oriented Reading Instruction (CORI). The students rated themselves on the following items in this order: (1) read often independently (behavioral), (2) read favorite topics and authors (motivation-intrinsic), (3) distract easily in self-selected reading (motivation-intrinsic reverse coded), (4) work hard in reading (cognitive-effort), (5) are a confident reader (motivation self-efficacy), (6) use comprehension strategies well (cognitive-strategies), (7) think deeply about the content of texts (cognitive-conceptual orientation), and (8) enjoy discussing books with peers (motivation-social) (Wigfield, et al., 2008). All the items were translated into Thai (see Appendix B).

The items are scored on a 5-point Likert-type scale, from 1= not true to 5 = very true. The criteria scale ranges as follows.

1.00-1.99	= 1 means not at all true of me
2.00- 2.99	= 2 means not very true of me
3.00- 3.99	= 3 means somewhat true of me
4.00- 5.00	= 4 means very true of me

Descriptive statistics were used to examine the findings.

3.3.1.3 Reading Engagement Checklist

The reading engagement checklist was used to measure students' reading engagement levels. The student engagement checklist developed by Guthrie (2005) was adopted and translated into Thai in order to assess the four dimensions of students' reading engagement: affective, behavioral, cognitive, and social engagement, on 4-point scales (see Appendix C).

The checklist was first sent to three experts for the verification of content validity. Each item was rated on a three point scale, 1 = Congruence, 0 = Questionable, and -1 = Incongruent. The mean scores from three experts were calculated, and each item had an index higher than 0.50. Thus, the checklist was reliable and appropriate for the study.

The statements in the checklist were revised by re-wording and rephrasing, as shown in the following example. (Table 3.4)

Table 3.4 Revision of the Reading Engagement Checklist Based on Experts' Evaluation

Dimension of Engagement	Original Statement	Revised Statement
Affective Engagement	<p>นักเรียนส่งเสียงที่แสดงถึงความสนใจ เช่น อืม ใจ Grins broadly or suddenly; tone suggests great excitement or interest; makes noises (e.g., “ooh”) which suggest great interest</p>	<p>นักเรียนส่งเสียงที่แสดงถึงความสนใจ เช่น อืม ใจ <u>หรือ พยักหน้าตอบรับคำพูดของผู้สอน</u></p>
Behavioral Engagement	<p>นักเรียนทำกิจกรรมโดยเห็นได้จากสายตาและท่าทาง ตอบสนองต่อผู้พูด</p> <p>Clearly on-task, as suggested by eye movement and posture towards speaker; raising hand (perhaps just briefly); writing; speaking; clearly listening (suggesting that student is attentive at least behaviorally)</p>	<p>นักเรียนทำกิจกรรมโดยเห็นได้จากสายตาและท่าทาง ตอบสนองต่อผู้พูด <u>เช่น การยกมือ</u></p>

The segment of the videotaped lessons (Weeks, 3, 6, 9) that represented the focus of the day's lesson was transcribed for the analyses of student engagement. For each 30-second interval of the lesson segments, three raters, who are English

instructors in university level, rated three high engaged students on 4-point scales through several rounds of independent and mutual viewing of this study's videotapes. The inter-rater reliability of the checklist was 0.908 which indicated that the coding was highly consistent.

Each student's ratings on the affective, behavioral, and cognitive engagement scales were summed and analyzed through descriptive statistics.

The criteria scale ranges as follows.

1.00 - 1.99 means low engagement

2.00- 2.99 means moderate engagement

3.00- 4.00 means high engagement

3.3.1.4 Personal Intelligence Inventory (PI inventory)

The development of PI inventory was based on Gay's (2001) Multiple Intelligence inventory. Only two intelligences, intrapersonal and interpersonal intelligence, were adopted, translated into Thai, and adjusted to the Personal Intelligence reading context for this study. The participants rated the PI inventory before and after receiving the PIRI (see Appendix D). The inventory is not an intelligence test. It produces an intelligence profile giving students a sense of how much they are focusing on a particular intelligence in their daily life.

The PI inventory, consisting of 20 items, was a self-report presented in the form of 4-point Likert-type scale, from 1= not at all like me to 4 = most like me. The students put a mark on the number (1-4) according to the extent to which they agreed in each statement:

1 = Not at all like me

2 = Somewhat like me

3 = More like me

4 = Most like me

The criteria scale ranges as follows.

1.00- 1.99 means not at all like me

2.00- 2.99 means somewhat like me

3.00-3.99 means more like me

4.00- 4.99 means most like me

The inventory was validated by two means: expert validation and pilot test. The experts rated each item in the inventory according to the degree of congruence with the Personal Intelligence theory. The rating scales ranged from 1 (Congruence), 0 (Questionable), and -1 (Incongruent). The experts' evaluation form contained some spaces for the experts to provide additional comments. The evaluation was calculated according to the average scores of each item. The items that scored higher than 0.50 were reserved for use; those that scored between 0.00-0.50 were modified.

The revision of the PI inventory was based on the experts' suggestions. The statements were adjusted to be more directed to Personal Intelligence in reading as advised by Expert I. Some statements (Items 4 and 5) were changed to be related to the reading context (see Table 3.5).

Table 3.5 Revision of the Personal Intelligence Inventory Based on Experts' Evaluation

Aspects of PI	Original Statement	Revised Statement
<i>Intrapersonal intelligence</i>	1. ฉันชอบทำงานคนเดียวโดยไม่มีใครมารบกวน I like to work alone without anyone bothering me	1. ฉันชอบอ่านหนังสือคนเดียว
<i>Intrapersonal intelligence</i>	2. ฉันชอบเขียนบันทึกประจำวัน I like to keep a diary	2. ฉันชอบจดบันทึกย่อเพื่อช่วยให้เข้าใจเรื่องที่อ่าน

Table 3.5 Revision of the Personal Intelligence Inventory Based on Experts' Evaluation

Aspects of PI	Original Statement	Revised Statement
<i>Intrapersonal intelligence</i>	4. เมื่อมีข้อโต้แย้งเกิดขึ้น ฉันมักจะเดิน ออกมาจากสถานการณ์นั้นจนกระทั่ง ฉันใจเย็นลง In an argument I will usually walk away until I calm down.	4. เมื่ออ่านไม่เข้าใจ ฉันจะหยุด อ่าน
<i>Interpersonal intelligence</i>	5. ฉันมีเพื่อนสนิทหลายคน I have several close friends.	5. ฉันเข้าใจความรู้สึกของเพื่อนๆ เสมอ
<i>Intrapersonal intelligence</i>	13. ฉันรู้ว่าตนเองเก่งในเรื่องใด และไม่ ถนัดในเรื่องใด I know what I am good at and what I am weak at	13. ฉันรู้จักจุดเด่นและจุดด้อยในการ อ่านของฉัน
<i>Interpersonal intelligence</i>	14. ฉันชอบช่วยสอนเพื่อนนักเรียน ด้วยกัน I like helping teach other students	14. ฉันอธิบายเกี่ยวกับเรื่องที่ฉัน อ่านให้เพื่อนๆ เข้าใจได้
<i>Interpersonal intelligence</i>	15. ฉันชอบทำงานเป็นกลุ่ม I like working with others in groups	15. ฉันชอบอ่านหนังสือกับเพื่อนๆ ในกลุ่มของฉัน
<i>Intrapersonal intelligence</i>	19. ฉันมองว่าตนเองเป็นคนมุ่งมั่น มี อิสระ และไม่คล้อยตามผู้อื่น I find that I am strong-willed, independent and don't follow the crowd	19. ฉันมีความมุ่งมั่น และมีอิสระ ในการอ่าน
<i>Intrapersonal intelligence</i>	20. ฉันชื่นชมตนเองเกือบจะตลอดเวลา I like myself (most of the time)	20. ฉันชอบที่ตัวเองเป็นนักอ่าน

The inventory was distributed to 30 SKRU undergraduate students enrolling English for Communication and Study Skills course in April 2011 to be pilot-tested. It indicated reliability value at 0.746. This showed that the inventory was acceptable to use in the main study.

3.3.1.5 Classroom Observation Form

The classroom observation form involved related procedures for gathering data during actual PIRI lessons, primarily by watching, listening, and recording. The observation aimed to collect qualitative data to triangulate the quantitative data obtained from the PI inventory in light of interpersonal intelligence. The form was simply a tool to investigate what happened inside the PIRI classroom relating to the development of students' personal intelligences. An observation scheme involved many different facets of interaction relating to students' interpersonal intelligence (see Appendix E). The class was observed in Weeks 3, 6, and 9. The observation summarized overall evidence of classroom activities and students'/teacher's behaviors that promoted personal intelligence skills.

3.3.1.6 Student Worksheets

The student worksheets aimed to collect qualitative data to triangulate the quantitative data obtained from the PI inventory, especially intrapersonal intelligence. The worksheet construction was based on K-W-L (Know, Want to Know, and Learn) chart (Ogle, 2009) and KWHL chart Grabe (2009) chart that combined before reading, during reading, and after reading activities. Students were asked what they know (K) about the topic of the reading, what they want to know (W) about the topic, and how (H) they will accomplish their goals. Toward the end of the post-reading segment of the lesson, the class revisited the KWHL chart and reported what they have learned (L) and which strategies (listed in the H column) were most effective. The students can also connect the newly learned information (listed in the L column) with the already known information (listed in the K column) to consolidate their reading comprehension.

In sum, it is a tool for promoting strategic reading and motivating students to read by helping them discover what they have learned from reading. The process

activates readers' schema by relating the content material to their background knowledge, goal setting, planning, monitoring for key points, evaluating text information, and relating learning outcomes to the reading goals. The KWHL chart used in the study was accompanied by metacognitive awareness part. This part asked the students about reading problems occurred and how they solved those problems while they read. The students answered these questions by describing what they encountered in detail and giving examples if possible. The worksheet was administered in Weeks 3, 6, and 9 (see Appendix F).

3.4 The Development of Personal Intelligence Reading Instruction

Personal Intelligence Reading Instruction (PIRI) was developed for the study. The development involves the exploration of related theories and experts' validation. Personal Intelligences can be viewed as a cognitive process that fixes and fosters the teaching and learning of English reading skills in classrooms. It is pedagogy that supports the acquisition of metacognitive awareness and strategies among Thai undergraduate students.

The four teaching phases of PIRI—Observe & Personalize, Search & Retrieve, Comprehend & Integrate, Communicate to Others—are adopted from the teaching stages of CORI

Observe & Personalize

The purpose of this phase is to develop students' awareness that their prior knowledge can be applied to the topic of the unit as illustrated in Figure 3.2. As the focus of the PIRI is on intelligences that enhance English reading ability and engagement in reading, developing students' awareness of their intra-and interpersonal intelligences is very crucial. That means determining students' beliefs about learning and whether they believe that learning occurs as a result of effort or the systematic application of intelligence techniques. It is during the Observe & Personalize phase that teachers encourage metacognitive knowledge, or awareness of activities which assist in learning a language, the kinds of tasks that are involved, and the importance of having a particular intelligence to assist in reading. The students may also understand that there is more than one way to learn, and that part of their

task as learners is to determine the reading approach that best suits them individually. They may understand and appreciate intelligence by knowing that the effective reading results from selection and application of intra- and inter-personal intelligences, the things that more able students do to help them learn.

Lesson 5 (Monitoring & Collaboration)


A Taste of the South

Songkhla' s

A Southerner Restaurant

Don't miss these highlights from our kitchen!

- Kaeng Lueang**
A southern-style sour and spicy curry consisting fish and vegetables.
- Kaeng Tai Pla**
Setting fire to your mouth with a very hot curry made with aromatic fish stomach and an assortment of local vegetable. It's Yummy!
- Klua kling**
Usually fried with meat, klua kling is a spicy paste; Nakhon Si Thammarat's version of the paste is considered to be the spiciest in all of Thailand, using an abundance of prik khri/ noo.



Observe & Personalize: Link new information to your experiences.

A. Matching: Read the menu above. Match each type of food (1-3) with its picture.

Figure 3.2 Observe & Personalize

Search & Retrieve

The Search & Retrieve phase helps students know exactly what they need or want to understand, and it allows them to disregard the rest or use it as background information only. Two techniques constituting this learning phase are skimming and scanning. Skimming involves searching for the main ideas the writer wants to get across, while scanning means searching for specific details of interest to the reader. Preview questions help readers to skim and scan more easily. The questions often provide many clues and require simple “true/false” or “yes/no” responses or a choice from a set of answer. Moreover, charts to complete, lists to write, diagrams to fill out, and other mechanisms also provide clues about what kind of general points or specific

details the learners need to pick up in a reading passage. These help learners get the idea quickly and efficiently.

Search & Retrieve: Look for information to answer the question.

C. Skim for the topic of each paragraph. Read the following article then match a heading (a-c) with the correct paragraph (1-3).

Paragraph	Heading
1. _____	a. Preventing new drinkers as the mechanism to prevent alcohol-related harms
2. _____	b. Impact of warning messages on drinkers
3. _____	c. Experience from the pictorial warning messages on tobacco packages

Figure 3.3 Search & Retrieve


In addition, the Search & Retrieve phase involves using resources to find out the information. Encyclopedias, travel guides, magazines, the Internet websites, or general books can provide useful background information so that readers can better understand a particular reading text.

Comprehend & Integrate

In the Comprehend & Integrate phase, the teacher uses explicit instruction to teach a particular personal intelligence (e.g., goal-setting, comprehension monitoring, evaluation, sensing others' feeling, collaborative work, exchanging explanations, etc.). In teaching, the teacher explicitly names the intelligence to be learned, indicates how the intelligence is used with a specific task, and tells why the intelligence is important for reading.

Comprehend & Integrate: *Activate prior knowledge and make inferences related to the text.*

Answer the following questions:



The main thing I remember is

The benefits of spices are

The most traditional sauce is

The weather of the south tends to be

The uniqueness of southern dishes is

Figure 3.4 Comprehend & Integrate

After having agreed on the name of the strategy, the teacher describes how the intelligence is used with specific classroom learning activities. The description should be as complete as possible, identify each step required to use the intelligence, and also recognizing why the intelligence is appropriate for the tasks or materials being used. The teacher modeling of the intelligence during the Comprehend & Integrate phase is an effective way to demonstrate to students how the intelligence can be used. The teacher should describe the use of the personal intelligence strategies with more than one example or activity so the students see that the intelligence is not limited to one specific task. The teacher might caution the students that they may need to practice the intelligence for a while until they feel comfortable with it before using it during reading.

Communicate to Others

In this phase, students reflect on their intelligence use and appraise their success in using it as well as the contribution the Personal Intelligences makes to their reading comprehension. The students are given either individual or group assignments depending on the intelligence they are practicing. The teacher asks the students to write down the PI they used during an activity or classroom assignment, to indicate how the PI work, and note any changes in the PI from the way in which they have been originally described in class. The teacher then guides a full class discussion of the PI that seem most useful for the assignment. Meanwhile, the students keep

dialogue journals about PI use and share these with the teacher. The students might compare their own performance on a task completed without using PI and a similar task in which they have applied PI. The students can also use a checklist to indicate the PI they have used with different materials. Furthermore, the students can design and create a method for sharing the information learned by peer teaching, making a poster, or contributing a public service announcement.



Figure 3.5 Communicate to Others

Personal Intelligences

To better understand PIRI in the four reading phases, the components of PIs and theoretical underpinnings need to be elaborated.

The explicit use of PIs in reading instruction can be developed on the basis of the intrapersonal and interpersonal intelligences.

Intrapersonal intelligences

Intrapersonal intelligence involves three practices—goal setting, monitoring evaluation. The description of the three practices is as follows:

Goal setting

Goal setting involves planning and preparing to accomplish the reading tasks. Good readers usually make plans for how to achieve their goals. Goals can range from basic comprehension of text information such as carrying out simple tasks as part of functional literacy skills (e.g. finding simple information, checking facts, predicting, etc.), to advanced academic goals that may involve critically interpreting texts in the light of an array of other information and using critical interpretation for other

academic tasks (e.g. summarizing a text, synthesizing multiple sources of information, evaluating information, forming an argument, etc.).

Monitoring

Monitoring tasks usually involve detecting errors in texts while reading. It includes (a) detecting text difficulties; (b) improving memory of text material; and (c) performing better on standard reading comprehension tests. Awareness of text organization can be provided. Comparison, problem-solution, causation can help the students build their knowledge of text structure and discourse organization.

Evaluation

Evaluating is a reading strategy performed after reading. Readers give their opinions and comments, recognize alternative views, and offer rational positions concerning the text. This technique helps the readers check and evaluate the accuracy of their understanding, recheck what they are confused about, and find solutions to solve the problems.

Interpersonal intelligence

Sensing others' feeling

Learners can purposefully become aware of fluctuations in the thought and feelings of particular people who use the new language. Such awareness brings the learners closer to the people they meet, helps them understand more clearly what is communicated, and suggests what to say and do. Specifically, in reading instruction, the students can sense the feelings of people with whom they communicate informally through letters, notes, or memos. Formal writing like novels, stories, and articles can be understood more easily when learners consciously try to get inside the skin of the writer to understand the writer's point of view.

Collaboration

Interpersonal strategies such as listening, taking turns, speaking in suitable voice, and encouraging full participation can be encouraged. These certainly enhance the productivity and enjoyment of group work. Collaboration among students in

reading has been correlated with dimension of intrinsic motivation such as curiosity and reading involvement. In addition, collaborative structures in reading have been observed to increase students' perceived social support for reading and performance on reading comprehension tasks. This strategy is particularly interesting from an L2 standpoint because it has been effective with struggling readers, including language-minority students.

Exchanging explanations

Through the pair of group work interactions, learners incorporate ways of thinking and behaving that foster the knowledge, skills, and dispositions needed to support transfer to other situations that require independent problem solving. In the context of discussion, the students make public their perspectives on issues arising from the text, consider alternative perspectives proposed by peers, and attempt to reconcile conflicts among opposing points of view. The discussion approaches promoting students' higher-level thinking and comprehension of text. CSR (Collaborative Strategic Reading) uses discussion to foster students' critical reading and thinking about content area text as part of reading instruction. This approach also reinforces conversation among students that draws on personal experiences, background knowledge, and text for interpretive support.

In sum, each of the six practices of Personal Intelligences such as goal setting, evaluation, collaboration, etc. will be delivered to the students through the four teaching stages: Observe & Personalize, Search & Retrieve, Comprehend & Integrate, and Communicate to Others. Through the process, the readers will select and organize informational input, relate it to prior knowledge, retain what is considered important, use the information appropriately, and reflect on the outcomes of their learning efforts.

3.4.1 Personal Intelligences Reading Instruction (PIRI) Framework

The theoretical framework forms a foundation for the integration of Personal Intelligences and reading instruction as shown in Figure 3.6. Personal Intelligence strategies aim at stimulating reading awareness through the four teaching phases.

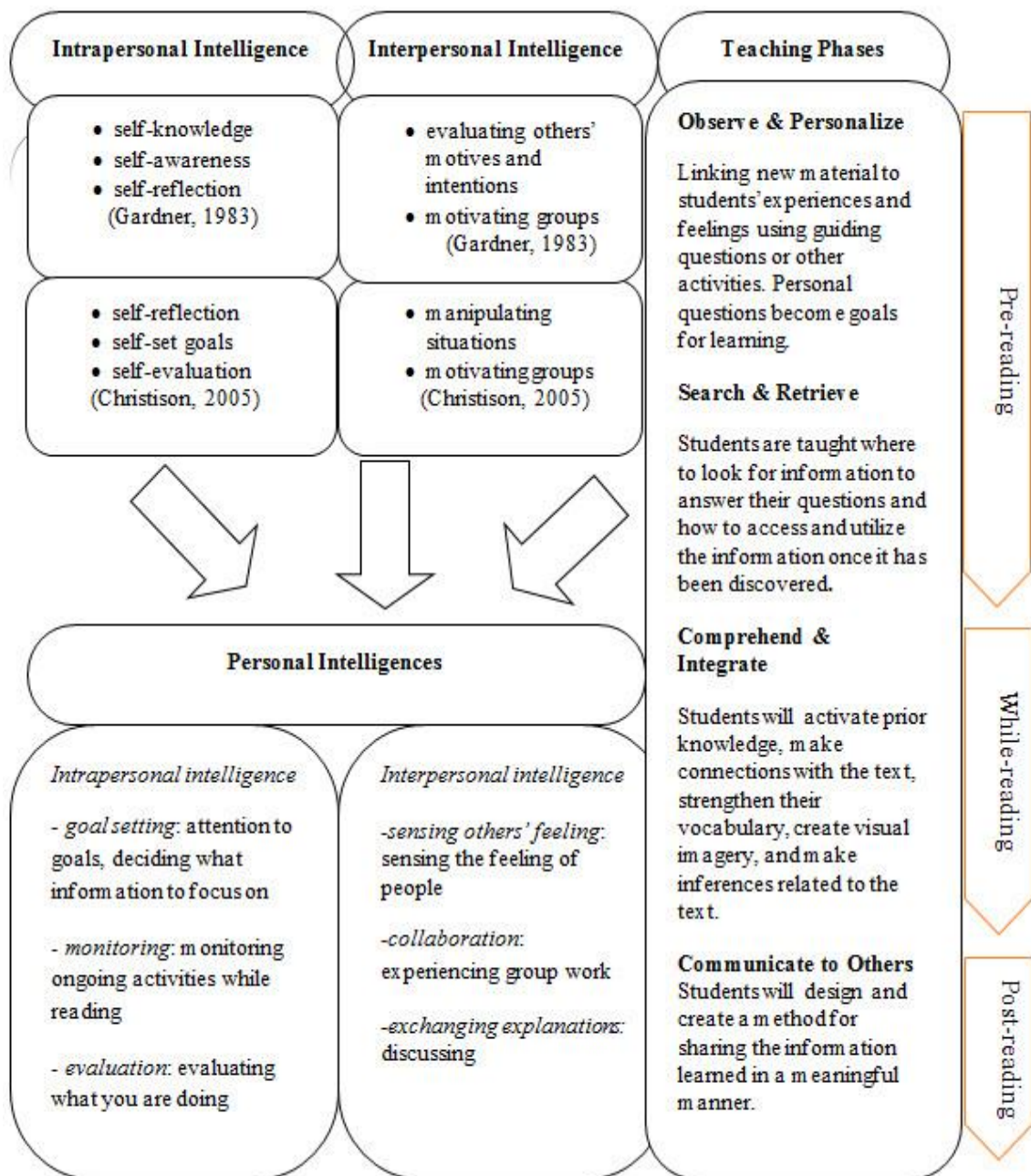


Figure 3.6 PIRI Framework

3.4.2 PIRI Instructional Manual

The instructional manual provides an overview and information related to the rationale of the instruction, instructional materials, activities, the teacher's role, student's role, assessment and evaluation, and a learning environment for the implementation of the instruction (see Appendix G). PIRI objectives are described below.

3.4.2.1 Objectives

After completing PIRI, the students were able to do the followings:

1. Set a reading goal before they read and reflect their opinion towards a given text after by using Personal Intelligence strategies individually and in small groups.
2. Set a reading goal before reading and complete given reading tasks by using Personal Intelligence strategies individually and in small groups.
3. Set a reading goal and exchanging what they already knew/learned with others in small groups.
4. Check comprehension by using Personal Intelligence strategies individually and in small groups.
5. Check comprehension while reading and share their study maps with others in small groups.
6. Check comprehension while reading and make a study map to share their reading problems and solutions with the class.
7. Evaluate the reading text and give their opinion towards the text by using Personal Intelligence strategies individually and in small groups.
8. Evaluate the reading text and discuss in small groups to complete a pictogram summary.
9. Evaluate the reading text and determine what reading level they achieved by using Personal Intelligence strategies individually and in small groups.

3.4.2.2 Scope and Sequences

PIRI consisted of three units. Each unit focused on one academic content topic. One unit covered nine hours of in-class learning. In each class, the personal intelligence strategies, both intra- and inter-personal, were addressed through the four CORI teaching phases. Table 3.6 is a summary of PIRI scope and sequences.

Table 3.6 PIRI Scope and Sequences

Weeks (3 contact hours/ week)	Objectives	Themes	Topics	Personal Intelligence Strategies		Assessment
				Intrapersonal	Interpersonal	
1	Course Introduction and Pre-test					
2	Set reading goals before reading and reflect opinion towards a given text individually and in small groups	Health	Alcohol Graphic Warning Labeling	Goal-setting	Sensing others' feeling	
3	Set reading goals before reading and complete given reading tasks in small groups	Food	Spice up your Life with Thai Chilies	Goal-setting	Collaboration	

Table 3.6 PIRI Scope and Sequences

Weeks (3 contact hours/ week)	Objectives	Themes	Topics	Personal Intelligences		Assessment
				Intrapersonal	Interpersonal	
4	Set reading goals and exchanging what already knew/learned with others in small groups	Technology	Pros and Cons of Social Networking Sites	Goal-setting	Exchanging explanations	Students' reading engagement Students' self-evaluation (KWHL)
5	Check comprehension while reading and share study maps with other in small groups	Health	Effectiveness of Pictorial Warning Messages	Monitoring	Sensing others' feeling	
6	Check comprehension by using monitoring strategies individually and in small groups	Food	A Taste of the South	Monitoring	Collaboration	

Table 3.6 PIRI Scope and Sequences

Weeks (3 contact hours/ week)	Objectives	Themes	Topics	Personal Intelligences		Assessment
				Intrapersonal	Interpersonal	
7	Check comprehension while reading and make a study map to share reading problems and solutions with the class	Technology	Is Facebook an Addiction?	Monitoring	Exchanging explanations	Students' reading engagement Students' self-evaluation (KWHL)
8	Evaluate the reading text and give opinion towards the text by using reading strategies individually and in small groups	Health	Pictorial warning label on alcoholic beverage packages	Evaluation	Sensing others' feeling	
9	Evaluate the reading text and complete a pictogram summary in small groups	Food	Food Culture	Evaluation	Collaboration	

Table 3.6 PIRI Scope and Sequences

Weeks (3 contact hours/ week)	Objectives	Themes	Topics	Personal Intelligences		Assessment
				Intrapersonal	Interpersonal	
10	Evaluate the reading text and determine your own reading level individually and in small groups	Technology	Social Networking and Education	Evaluation	Exchanging explanation	Students' reading engagement Students' self-evaluation (KWHL)
11	Course summary and Post-test					

3.4.2.3 PIRI Instructional Materials

The following materials were used for PIRI:

1. Non-simplified extracts from actual academic textbooks, websites, and magazines, which were employed as the reading passage of each unit;
2. Power Point slides;
3. Video clips and pictures from the Internet; and
4. Supplementary questionnaires and worksheets.

Reading materials were selected according to CORI thematic practices.

Guthrie and his colleagues (2012) confirm that providing a thematic unit for the context of literacy learning is the first principle of motivation for information text comprehension. The reading passages, therefore, centered around three themes—health, food, and technology.

3.4.2.4 PIRI Lesson Plan

The PIRI lesson plan included detail information of activities and procedures used in the classroom. Each lesson plan consisted of the title of a lesson, objectives, material, time, and activities (see Appendix G).

Nine lesson plans were designed to introduce the students to Personal Intelligences and to teach them to incorporate these intelligences into their reading. The lessons incorporated intrapersonal intelligence, e.g. goal-setting, monitoring, and evaluation with interpersonal intelligence practices, e.g. sensing others' feeling, collaboration, and exchanging explanations. Every single lesson followed four teaching phases: Observe & Personalize, Search & Retrieve, Comprehend & Integrate, and Communicate to Others, as pre-reading, while- reading, and post-reading activities. The first phase allowed students to link new materials to their experiences. Then, the students were taught where to look for information or personal questions in the previous phase. During the third phase, they had an opportunity to make connections with the text they were going to read. Finally, the students design and created a method for sharing the learned information for both their own understanding and their classmates.

3.4.3 Personal Intelligences Reading Instruction (PIRI) Validation

The instructional manual and lesson plans were validated by two means: expert validation and pilot test. All experts are full-time professors of English language teaching. The main items for evaluation included rationale, theoretical framework, scope and sequences, and components of the lesson plans. An evaluation form was given to the experts. The instruments were evaluated on a three-point rating scales, ranging from Exceed (3), Meet (2), and Revise (1). If the mean scores of any items are below 0.50, that item had to be modified. However, the experts' comments and suggestions were still considered even though the mean scores of an item were above 0.50. The validation of the PIRI was shown in Table 3.7.

Table 3.7 Experts' Validation of PIRI

Assessment Issues	Experts			Mean	Meaning
	J	K	L		
1. Ideas/Concept	3	3	2	2.66	Meet
2. Objectives	3	2	3	2.66	Meet
3. Materials	3	2	3	2.66	Meet
4. Teaching procedures	2	3	2	2.33	Meet
5. Activities	2	2	3	2.33	Meet

The mean scores in the Table 3.7 illustrates that the mean scores of all five items were from 2.33-2.66. These indicated that the instructional manual and the lesson plans are suitable for undergraduate students.

3.4.4 The Pilot Study of PIRI

The PIRI pilot study was conducted on a group of 30 students who did not belong to the sample group of the study. One unit of the PIRI lessons was used in the trial instruction, which took place in the English for Communication and Study Skills course in April 2011. The pilot study lasted 6 hours.

3.4.5 Redesigning PIRI

3.4.5.1 Revision of the PIRI Lesson Plan

For an appropriate lesson sequence, goal-setting strategy was introduced first, followed by monitoring and evaluation strategies.

3.4.5.2 Revision of PIRI Instructional Materials

Some explanations and tasks of exemplification were added to the reading tasks so as to facilitate the students' task completion. All pictures and titles of the reading lessons were color printed in order to ease reading.

3.5 Data Collection

The data collection is illustrated in Table 3.8 consisting of three phrases: before, during, and after the interventions.

3.5.1 Before the Interventions

Prior to the Personal Intelligences Reading Instruction (PIRI), the English Reading Ability Test (the ERA Test), the Personal Intelligence inventory (PI inventory) and Reading Engagement Index (REI) were administered to the students in order to assess undergraduate students' reading ability and their levels of reading engagement. Before participating in the instruction, the students received an overview of the course. The content of the Personal Intelligence Reading lessons and activities during the instruction were briefly explained.

3.5.2 During the Interventions

The students received PIRI for 10 weeks. Reading engagement checklist was rated by the teacher researcher in order to assess the four dimensions of students' reading engagement: affective engagement, behavioral engagement, cognitive engagement, and social engagement. Three students were selected from their high scores on Reading Engagement Index (REI) and were videotaped in Week 3, 6, and 9 in order to check their engagement according to the reading engagement checklist. The researcher observed the class and administered the student worksheets in order to collect qualitative data.

3.5.3 After the Interventions

At the end of the instruction, the students were post-tested with the ERA Test, the PIs inventory, and the Reading Engagement Index to examine the effects of PIRI on reading ability, reading engagement and PIs profiles. The scores were compared with their pre-test ones in order to answer the three research questions.

Table 3.8 Outline of Data Collection

Before the Implementation	
	<ul style="list-style-type: none"> • The pre-test, the ERA Test, PIs inventory, and the Reading Engagement Index, were administered to the experimental group. • Samples were selected for video observation according to their scores on the REI.
During the Implementation	
Week 1-9	<ul style="list-style-type: none"> • An orientation on PIRI was conducted. • The PIRI was delivered. • Video observations were carried out during Weeks 3, 6, and 9. • The teacher rated the students' engagement by using the reading engagement checklist. (Weeks 3, 6, 9) • Student worksheets were administered in Weeks 3, 6, and 9.
After the Implementation	
Week 10	<ul style="list-style-type: none"> • The post-test, the ERA Test, PIs inventory, and the Reading Engagement Index, were administered to the experimental group.

3.6 Data Analysis

The data analysis was briefly mentioned in Table 3.2 (Page 31) for all the research instruments. Details of data analysis according to each research question were described as follow:

Research question 1: To what extent do PIRI increase students' English reading ability?

Answers to research question one came from the English Reading Ability Test (the ERA Test). The scores from the English reading ability pre- and post-tests were used to examine effects of the treatments on the experimental group. Their English reading ability pre- and post-test scores were compared using dependent samples t-test and effect size (d). The effect size of these two mean scores was calculated. The effect size provides a measure of the magnitude of the difference expressed in standard deviation units in the original measurement. It is a measure of the practical importance of a significant finding. The interpretation of effect size can be in statement. An effect size of 0.20 is a small effect, 0.50 a medium effect, and 0.80 a large effect. The d statistic may be computed using the following equation:

$$d = \frac{\text{Mean}}{SD}$$

Figure 3.7 Cohen's d

Research question 2: To what extent do PIRI increase students' levels of reading engagement?

Answers to research question two came from two research instruments. The reading engagement checklist and reading engagement questionnaire measured various aspects of reading engagement— affective engagement, behavioral engagement, cognitive engagement, and social engagement.

The arithmetic mean and standard deviation were calculated for each item of the Index and the checklist.

Research question 3: To what extent does PIRI improve students' PI profiles?

Answers to this question came from the Personal Intelligences inventory (PI inventory), classroom observation form, and the student worksheets. The arithmetic mean and standard deviation were calculated for each item of the inventory. The qualitative data obtained from the observation and the worksheets were considered in order to triangulate the data.

3.7 Chapter Summary

This study was conducted with one-group-pre-and post-test research design. Instructional instrument and research instruments were developed and validated by the experts. The pilot studies were carried out to verify the practicality of the instructional treatments and the validity of research instruments.

During the 10-week treatments, the students practiced both intrapersonal and interpersonal skills integrated in nine reading units. After the treatments, English reading ability pre- and post-test scores were compared. The level of students' reading engagement was measured by the Reading Engagement Index (REI) and reading engagement checklist. The Personal Intelligence profiles were collected to examine the Personal Intelligence strengths of the students after receiving PIRI.

The next chapter reports the findings of this study according to the three research questions. The first one examines the effects of PIRI on students' reading ability by examining the mean scores of English reading ability. The second one focuses on the students' levels of reading engagement from the checklist and index. The last one investigates students' Personal Intelligence strengths from the inventory, worksheets, and classroom observation.

CHAPTER IV

RESULTS

This chapter examines the data collected from the English Reading Ability Test, Reading Engagement Index, reading engagement checklist, Personal Intelligence inventory, classroom observation form, and student worksheets. Descriptive statistical procedures were used to analyze the data and the findings were examined in light of three research questions:

- 1) To what extent does PIRI increase the students' English reading ability?
- 2) To what extent does PIRI increase the students' levels of reading engagement?
- 3) To what extent does PIRI improve the students' PI profiles?

Research Question 1 examines the improvement of test scores after the treatments, and the mean scores of English reading ability pre- and post-test were used. Research Question 2 deals with the level of reading engagement. Behavioral, motivational, and cognitive aspects of reading engagement were measured from the Reading Engagement Index (REI) and reading engagement checklist. Research Question 3 explores Personal Intelligence strengths of the students after receiving PIRI. The qualitative data obtained from the observation form and the worksheets were considered in order to triangulate the data.

4.1 Results of the Research Question 1

Research Question 1: To what extent does PIRI increase the students' English reading ability?

This research question explores the effects of Personal Intelligence Reading Instruction on English reading ability by assessing the English reading ability scores.

Table 4.1 Findings of English Reading Ability Pre- and Post-Tests (N= 39)

	n	Mean	S.D.	<i>t</i>	<i>df</i>	Sig.	Mean difference	<i>d</i>
Pre-test	39	6.97	2.59	3.255	38	.002	1.333	.52
Post-test	39	8.31	2.31					

The results in Table 4.1 showed that students made a significant improvement ($t(38) = 3.255, p < 0.05$) on their English reading ability pre- and post-tests after 10 weeks of the treatment. The effect size of these two mean scores using Cohen's *d* was described as medium ($d = .52$).

4.2 Results of Research Question 2

Research Question 2: *To what extent does PIRI increase the students' levels of reading engagement?*

The second research question focuses on students' levels of reading engagement. There are two research instruments involved, i.e. REI and reading engagement checklist. The data were analyzed by means of descriptive statistics as shown in Table 4.2 and Table 4.3.

4.2.1 Reading Engagement Index

Table 4.2 Reading Engagement Index Results (N= 39)

Statements	Pre-intervention		Level	Post-intervention		Level
	Mean	S.D.		Mean	S.D.	
1. Often reads independently	3.13	0.80	Somewhat true of me	3.51	0.91	Somewhat true of me
2. Reads favorite topics and authors.	3.56	0.99	Somewhat true of me	3.95	1.14	Somewhat true of me
3. Easily distracted in self-selected reading.*	4.03	0.95	Very true of me	4.46	0.75	Very true of me*
4. Works hard in reading	2.28	0.79	Not very true of me	2.51	0.79	Not very true of me
5. Is a confident reader.	2.82	0.75	Not very true of me	3.05	0.79	Somewhat true of me
6. Uses comprehension strategies well.	2.72	0.91	Not very true of me	3.56	0.71	Somewhat true of me
7. Think deeply about the content of texts.	2.69	0.80	Not very true of me	3.28	0.94	Somewhat true of me
8. Enjoys discussing books with peers.	2.79	0.92	Not very true of me	3.49	0.97	Somewhat true of me
Total	3.00	0.87	Somewhat true of me	3.48	0.88	Somewhat true of me

Note: * reverse coded

From Table 4.2, the results of the REI were reported with no missing value. The mean scores of the REI were higher after 10 weeks of the treatment ($M = 3.48$, $S.D. = 0.88$). Although the students revealed that they “Easily distracted in self-selected reading” as their first choice before and after the intervention (item 3, $M = 4.03$, $S.D. = 0.95$, $M = 4.46$, $S.D. = 0.75$), item 4 “Works hard in reading” was the least favored on the index ($M = 2.28$, $S.D. = 0.79$, $M = 2.51$, $S.D. = 0.79$). Both items indicate that the students had low levels of intrinsic motivation for reading as item 3 (motivation-intrinsic) was reversely coded. Thus, the students did not possess much cognitive effort as they reported in item 4 (cognitive-effort) as well.

However, the students were confident readers. They were strategic in their approaches to comprehending what they read, knowledgeable in their construction of meaning from text, and socially interactive while reading as shown in Items 5, 6, 7 and 8. Item 5 “Is a confident reader” connotes individuals’ confidence in their ability to solve problem or accomplish a task. The students gained this ability more as shown by the post-intervention mean scores of this item ($M = 3.05$, $S.D. = 0.79$).

Moreover, the students learned to exploit more cognitive strategies as can be seen from the post-intervention mean scores of Item 6 “Uses comprehension strategies well” ($M = 3.56$, $S.D. = 0.71$) and Item 7 “Think deeply about the content of text” ($M = 3.28$, $S.D. = 0.94$). This means they used comprehension strategies well enough in the later lessons and they also displayed social motivation by sharing some ideas with their peer group while reading which could be noticed from the Item 8 “Enjoys discussing books with peers” ($M = 3.49$, $S.D. = 0.97$).

4.2.2 Reading Engagement Checklist

Table 4.3 Students’ Levels of Reading Engagement Results (N = 39)

Construct dimensionality of engagement	S1			S2			S3		
	W3	W6	W9	W3	W6	W9	W3	W6	W9
<i>Behavioral</i>	3.33	3.22	3.33	3.33	3.33	3.33	3.56	3.44	3.44
	<i>Mean 3.37</i>								

Table 4.3 Students' Levels of Reading Engagement Results (N = 39)

Construct dimensionality of engagement	S1			S2			S3		
	W3	W6	W9	W3	W6	W9	W3	W6	W9
<i>Affective</i>	2.78	3.22	3.22	2.89	3.33	3.22	2.89	3	3.56
	<i>Mean 3.12</i>								
<i>Cognitive</i>	3.22	2.89	3.22	3.33	2.89	3.22	3.11	3	3.11
	<i>Mean 3.11</i>								
<i>Social</i>	2.78	3.11	2.78	2.56	3.33	2.78	2.44	2.89	2.44
	<i>Mean 2.79</i>								

Note: S = Student; W = Week

Table 4.3 presented the descriptive statistics for students' levels of reading engagement rated by three raters in Weeks 3, 6, and 9 of PIRI. Three students were selected and videotaped. The criterion for selection was based on their scores on REI. The students were in the top 5% of the high-engaged students.

The range of reading engagement level was between 2.79 to 3.37. The students displayed behavioral, affective, and cognitive, engagement at the same level. Social engagement was the least rated (M = 2.79).

Simply put, the students were actively engaged in the reading activities. Essential behaviors included concentration, paying attention in class, and participating enthusiastically in classroom interactions. These enabling behaviors also reflected affective engagement as referring to positive affective reactions toward teachers and classmates as well as cognitive engagement was utilized while they read.

However, the social engagement was not clearly noticeable (M = 2.79). The students did not show quality of their verbal answer. Long deep-thinking answers were hardly found from the segmentations of video record. Not much evidence showed that the students raised their hands to answer in group-work situations or that the students spoke out without being called upon. Some students were left behind

because they were observed talking to each other while the teacher was giving explanation and while their classmates were paying attention to the lesson. Accordingly, social engagement was the least rated. Comments or interaction with eagerness or great enthusiasm were not obviously shown from the sample.

4.3 Results of Research Question 3

***Research Question 3:** To what extent does PIRI improve the students' PI profiles?*

To respond to Research Question 3, the finding from both quantitative and qualitative data were reported in support of the six personal intelligence strategies. The Personal Intelligence inventory (PI inventory), classroom observation form, and the student worksheets were employed. The arithmetic mean and standard deviation were calculated for each item of the inventory. The qualitative data obtained from the observation form were used to generate more insights for interpersonal intelligence and the worksheets were considered in order to reflect clearer views of intrapersonal intelligence.

4.3.1 Personal Intelligence Inventory

The findings of PI profiles consisted of intrapersonal and interpersonal intelligences as shown in Table 4.4.

Table 4.4 Students' Profiles of Personal Intelligences

Personal Intelligence aspects	Statements	Pre-intervention		Level	Post-intervention		Level
		Mean	SD		Mean	SD	
<i>Intrapersonal</i>							
<i>Goal setting</i>	1. I like to work alone without anyone bothering me.	2.87	0.95	Somewhat like me	2.87	0.92	Somewhat like me
	10. For a group presentation I like to contribute something that is uniquely mine, often based on how I feel.	2.15	0.78	Somewhat like me	2.33	0.87	Somewhat like me
	19. I find that I am strong-willed, independent and don't follow the crowd.	2.72	0.72	Somewhat like me	3.36	0.71	More like me

Personal Intelligence aspects	Statements	Pre-intervention		Level	Post-intervention		Level
		Mean	SD		Mean	SD	
	20. I like myself (most of the time).	2.41	0.94	Somewhat like me	2.85	0.84	Somewhat like me
Total		2.54	0.85	Somewhat like me	2.85	0.84	Somewhat like me
<i>Monitoring</i>	2. I like to keep diary.	2.38	0.71	Somewhat like me	2.41	0.82	Somewhat like me
	4. In an argument I will usually walk away until I calm down.	2.62	0.91	Somewhat like me	2.21	0.83	Somewhat like me
	7. If I have to memorize something I tend to close my eyes and feel the situation.	2.56	0.85	Somewhat like me	3.15	0.74	More like me
	8. I don't like crowds.	3.15	1.09	More like me	3.62	0.71	More like me

Personal Intelligence aspects	Statements	Pre-intervention		Level	Post-intervention		Level
		Mean	SD		Mean	SD	
Total		2.68	0.89	Somewhat like me	2.85	0.78	Somewhat like me
<i>Evaluation</i>	9. If something breaks and won't work, I wonder if it's worth fixing up.	2.36	0.81	Somewhat like me	2.10	0.75	Somewhat like me
	13. I know what I am good at and what I am weak at.	2.67	0.77	Somewhat like me	3.21	0.77	More like me
Total		2.52	0.79	Somewhat like me	2.66	0.76	Somewhat like me
<i>Intrapersonal Intelligence Total</i>		2.59	0.85	Somewhat like me	2.81	0.80	Somewhat like me

Personal Intelligence aspects	Statements	Pre-intervention		Level	Post-intervention		Level
		Mean	SD		Mean	SD	
<i>Interpersonal</i>							
<i>Sensing others' feeling</i>	5. I have several close friends.	2.87	0.77	Somewhat like me	3.00	0.65	More like me
	12. I'm quick to sense in others' reading difficulties.	2.28	0.72	Somewhat like me	2.51	0.85	Somewhat like me
Total		2.58	0.75	Somewhat like me	2.76	0.75	Somewhat like me
<i>Collaboration</i>	3. I get along well with others.	2.44	0.82	Somewhat like me	2.49	1.05	Somewhat like me
	11. For a group presentation I like to help organize the group's efforts.	2.28	0.69	Somewhat like me	2.67	0.66	Somewhat like me

Personal Intelligence aspects	Statements	Pre-intervention		Level	Post-intervention		Level
		Mean	SD		Mean	SD	
	15. I like working with others in groups.	2.44	0.75	Somewhat like me	2.59	0.79	Somewhat like me
	16. Friends ask my advice because I seem to be a natural reader who understands the writer's message.	2.03	0.81	Somewhat like me	2.00	0.56	Somewhat like me
Total		2.30	0.77	Somewhat like me	2.44	0.77	Somewhat like me
<i>Exchanging explanations</i>	6. If something breaks and won't work I try to find someone who can help me.	3.03	0.74	More like me	2.90	0.94	Somewhat like me

Personal Intelligence aspects	Statements	Pre- intervention		Level	Post- intervention		Level
		Mean	SD		Mean	SD	
		14. I like helping teach other students.	2.49	0.82	Somewhat like me	2.95	0.72
17. If I have to memorize something I ask someone to quiz me to see if I know it.	2.38	0.88	Somewhat like me	2.54	0.97	Somewhat like me	
18. In an argument I tend to ask a friend or some person in authority for help.	2.64	0.84	Somewhat like me	2.72	0.89	Somewhat like me	
Total		2.64	0.82	Somewhat like me	2.78	0.88	Somewhat like me

Personal Intelligence aspects	Statements	Pre-intervention		Level	Post-intervention		Level
		Mean	SD		Mean	SD	
<i>Interpersonal Intelligence Total</i>		2.49	0.78	Somewhat like me	2.64	0.81	Somewhat like me
	Total	2.54	0.82	Somewhat like me	2.72	0.80	Somewhat like me

As can be seen from Table 4.4, overall, though both intra- and inter-personal intelligence strategies were employed, the students slightly developed more personal intelligences in the post-intervention profiles ($M = 2.72$, $S.D. = 0.80$) than the ones in their pre-intervention profiles ($M = 2.54$, $S.D. = 0.82$).

The students showed a preference for intrapersonal intelligence ($M = 2.81$, $S.D. = 0.80$). Three strategies out of ten intrapersonal intelligence items, goal setting ($M = 2.85$, $S.D. = 0.78$) and monitoring ($M = 2.85$, $S.D. = 0.74$) were the highest, followed by evaluation strategy. Item 19 (goal setting), 7 (monitoring) and 13 (evaluation) showed the higher means scores of each strategy respectively (Item 19, $M = 3.36$, $S.D. = 0.71$), “I find that I am strong-willed, independent and don’t follow the crowd”, (Item 7, $M = 3.15$, $S.D. = 0.74$), “If I have to memorize something I tend to close my eyes and feel the situation”, (Item 13, $M = 3.21$, $S.D. = 0.77$), “I know what I am good and what I am weak at.”

The results from interpersonal intelligence indicated frequent use of exchanging explanations, sensing others’ feeling, and collaboration respectively. In the category of sensing others’ feeling, the students rated item 5, “I have several close friends”, the most ($M = 3.00$, $S.D. = 0.65$). This meant the students were able to point out the writer’s tone of voice or point of view. Also, they had the capacity to imaginatively place themselves in the role of the author of a text. Nevertheless, Item 6, “If something breaks and won’t work I try to find someone who can help me”, in the category of exchanging explanations was lower after the students experienced PIRI ($M = 2.90$, $S.D. 0.94$).

4.3.1.1 Intrapersonal Intelligence Qualitative Analysis

The above data was triangulated with those obtained from the student worksheets. The students developed their intrapersonal intelligences by employing goal-setting, monitoring, and evaluation strategies. According to their worksheet reports, they used those strategies more frequently after being exposed to PIRI. They were able to identify their strengths and weaknesses in reading as well as to read with their confidence. Although the three types of reading strategies were taught explicitly in class, the worksheets of week 9 showed that in the very last unit of the reading

lessons, there was no evidence indicating the use of a variety of reading strategies the students. The use of dictionaries which was not one of the strategies taught in class was the strategies that almost all of the students relied on.

One of highly developed intrapersonal learners was their capacity to set realistic goals for themselves. According to the following excerpts, Student # 4 reported that she set a specific goal by reading one chapter per day to help her practice reading skill.

Goal-setting Strategy

Student # 1: *I will read a chapter per day in order to practice reading skill. I think I would understand the story well when the teacher talks about it in class.*

Student # 2: *I want to know disadvantages of Facebook on education. Does Facebook really lower my grade?*

Meanwhile, in some students' response samples, the students described how they monitored their understanding of the story by identifying what the difficulty was and by asking themselves while they read to deal with the trouble.

Monitoring Strategy

Student # 3: *I don't understand what the author means when she says, 'hook on technology'.*

Student # 2: *Mostly, I use my background knowledge to help understand what the story is about. For example, I'm interested in technology. Therefore, I make the most of my prior knowledge to help comprehend the text when I read "Is Facebook an Addiction?".*

Student # 4: *I highlight information about five important words: what, who, when, where, why.*

Student # 1: *If I don't know a word, I read before it, after it. I have an idea what it means, but I don't stop. I ask teacher later.*

Student # 5: I didn't know how important the title was before. Now, I look at the title and pictures and think what the article is about first.

According to the students' responses, they showed awareness of the metacognitive strategies taught and reported using them during reading. Background knowledge came to play a role in order to help them understand the story. Meanwhile, highlighting important information of what, who, when, where, and why helped the students read with confidence and finally achieved reading goals. Likewise, reading around an unknown word for clues or using context clues and reading the title for main ideas are strategies the students favored.

In addition, re-reading part of a text is one of crucial strategies enhancing understanding. Some degree of students' interest in evaluation strategy was also perceivable as shown in their worksheets.

Evaluation Strategy

Student # 3: I usually paused at a quarter of a page to tell myself if I understood the story. It's like a very short summary, so that I wouldn't get confused. If I couldn't understand well, I would reread the part.

Student# 1: I couldn't get the gist of this story. I already tried to read it over and over again. I should find the main idea of each paragraph then.

4.3.1.2 Interpersonal Intelligence Qualitative Analysis

Based on the data from third sessions of classroom observation, only some evidence was found, showing that students shared some ideas with their peer group while reading; they helped one another interpret the text and also received help from their peer. In the following responses of observation note, students demonstrated certain perspectives that confirmed their use of interpersonal strategies while they read.

Exchanging Explanation

Most of students reported that peers were beneficial in reading class. Working with peers contributed much to their reading. They were freely able to ask questions and discuss their answers with peers, as the following:

Student # 6: *I don't like reading alone. I love working in group and share my ideas with friends. If we don't understand a sentence or a word, we can ask each other.*

Student # 3: *I always ask Student A if I need explanation, she can make it clear.*

Student # 4: *I prefer working with close friends of mine because they always talk together. I think it would be much easier to ask friends than the teacher.*

Sensing Others' Feeling

Some students presented how they felt toward the writer's tone of voice in a reading passage and the survey of the effects of pictorial warnings, as they reflected.

Student # 7: *The author strongly supports pictorial warnings on tobacco and alcohol packages. He shows many advantages of warning label in his article.*

Student # 8: *I think the pictorial warnings on tobacco package would work because of the disgusting pictures printed on the package.*

Student # 2: *Student B said she would use more disgusting pictures to be printed on the label because it would work better.*

Collaboration

PIRI allowed the students to perform their reading tasks with a partner or team members by reading together, questioning each other, or forming sentences using words from the texts. Group members brought their understanding of the passage, according to the following excerpts.

Student # 8: *My partner helped me understand the story after we discussed.*

Student # 4: *Reading with friends helped me because I could discuss with them some things I didn't understand.*

Student # 9: *Questioning each other helped learn more from the text. We kept asking each other until we got very clear answer.*

Student # 10: *I think the group members co-operate very well to accomplish the given task and I learn more from friends during the discussion.*

To summarize, the insightful data from the observation and the student worksheets triangulated with those obtained from the Personal Intelligence inventory. The students reported a satisfactory view towards the personal intelligence strategies. They found the reading passages more interesting to read if they could read in groups. PIRI facilitated students setting specific and achievable goals, making overt and doable plans for their reading tasks, adjusting strategies that helped them understand the text better and identifying sources of difficulties they encountered while reading.

4.4 Chapter Summary

4.4.1 English Reading Ability. Based on Research Question 1, PIRI improved the students' reading ability. The effect size of the pre-and post-test mean scores was medium.

4.4.2 Reading Engagement. According to Research Question 2, results drawn from self-rated REI and reading engagement checklist confirmed that PIRI enhanced students' level of engagement.

4.4.3 Personal Intelligence Profile. The students slightly developed personal intelligences in the post-intervention profiles than the ones in their pre-intervention profiles, according to Research Question 3. Intrapersonal and interpersonal intelligence strategies were slightly developed. The students' interaction from observation record and the student worksheets also underlined the findings of PI profiles.

Discussion of the results, along with theoretical and pedagogical implication will be elaborated in the next chapter. Recommendations for future research will also be provided.

CHAPTER V

DISCUSSION AND CONCLUSION

This chapter concludes the study, discusses the findings and limitations, and makes recommendations for further research.

5.1 Summary of the Study

This study investigated the impact of Personal Intelligence Reading Instruction (PIRI) on Thai university students' English reading ability and reading engagement.

The following research questions were examined:

1. To what extent does PIRI increase students' English reading ability?
2. To what extent does PIRI increase students' levels of reading engagement?
3. To what extent does PIRI improve students' PIs profiles?

Participants

There were thirty-nine first-year English-majored students in this study. They were enrolled in the Paragraph Reading Strategies class.

Procedures

The instruction for this study was prepared according to three relevant theories: personal intelligences, reading engagement, and reading comprehension. During the 10-week intervention, the participants were trained to acquire both intra- and inter-personal skills embedded in the nine lessons designed to support reading awareness. The lessons were developed to stimulate students' reading strategies for not only processing texts but also being able to monitor comprehension as well as to adjust intra- and inter-personal strategies as needed.

Data Collection

To answer Research Question 1, the mean scores of the English Reading Ability pre- and post-tests were compared to determine the effects of the treatments on students' reading ability. The scores of the English Reading Ability pre- and post-tests were computed by using dependent samples t-test to study students' reading ability

improvement after participating in PIRI. Cohen's d was also used to calculate the effect size.

Research Question 2 was addressed through the two research instruments. The Reading Engagement Index (REI) and reading engagement checklist were used to observe students' levels of engagement related to the affective, behavioral, and cognitive engagements. The segment of the videotaped lessons (Weeks 3, 6, and 9) that represented the focus of the day's lesson was transcribed for the analyses of student engagement. The data were transcribed and analyzed with descriptive statistics.

To answer the last research question, the Personal Intelligence inventory (PI inventory) was utilized in order to examine the effects of the treatments on students' Personal Intelligence profiles. The inventory was distributed twice: pre-intervention and post-intervention. The data were analyzed with descriptive analysis. For the qualitative data, the classroom observation form and the student worksheet were collected to triangulate the data from the PI inventory.

5.1.1 Summary of the Findings

The study sought to answer the research questions in three areas: English reading ability, reading engagement, and Personal Intelligence profiles.

English Reading Ability

The difference of English reading ability pre- and post-test mean scores was statistically different. That is, the Personal Intelligence Reading Instruction (PIRI) significantly improved students' reading ability.

Reading Engagement

Concerning the measurement of the level of students' reading engagement, the data from Reading Engagement Index (REI) showed that the students had higher reading engagement after experiencing PIRI. Even though they were strategic, knowledgeable in their construction of meaning from text, and socially interactive while reading, their intrinsic motivation and cognitive effort were not positively developed.

For the reading engagement checklist, the engagement measurement revealed that the behavioral, affective, and cognitive engagement were the engagement dimensions that the students expressed most, and social engagement was the least.

Personal Intelligence Profiles

Overall, the mean PI scale scores of the students were slightly higher after experiencing PIRI. The students used both intra- and inter-personal intelligences in reading tasks. The data was triangulated with those obtained from the classroom observations and student worksheets. The students reported a satisfactory view towards the personal intelligence strategies. They found the reading passages more interesting to read if they could read in groups. PIRI facilitated the students setting specific and achievable goals, making overt and doable plans for their reading tasks, adjusting strategies that helped them understand the text better and identifying sources of difficulties they encountered while reading.

5.2 Discussion

The discussion will be presented according to the three research questions.

5.2.1 PIRI and Gains in Reading Ability

Research Question 1 examined the improvement on reading ability. The comparison of the mean scores of the English Reading Ability pre- and post-tests showed that the students significantly improved their English reading ability. The students' reading abilities might be enhanced by the six most prominent constructs included in CORI.

Highlighting Thematic Unit

PIRI provided a thematic unit for the context of literacy learning. All PIRI lesson centered around three themes, namely food, health, and technology. Strategies that are taught for comprehension are placed within the context of the conceptual theme. A wide range of studies asserted that CORI can improve reading comprehension (Guthrie et al., 2007; Guthrie and Wigfield, 2000; Guthrie, et al., 2004; Wigfield et al, 2008; Taboda et al., 2009).

Affording Relevance

Relevance is defined as linking books and reading activities to students' personal experiences (Guthrie, Mason-Singh, and Coddington, 2012; Assor, Kaplan, and Roth, 2002). In PIRI, such links to self can be tied to students' cultural experiences such as Thai chilies, southern dishes and warning labels in Lesson 2 (Spice up your life with Thai chilies), Lesson 5 (A Taste of the South), Lesson 1 (Alcohol Graphic Warning Labeling), Lesson 4 (Effectiveness of Pictorial warning messages), and Lesson 7 (Pictorial warning label on alcoholic beverage packages), to a personal interest or a recent personal experience such as social networking in Lesson 3 (Pros and Cons of Social Networking Sites), Lesson 6 (Is Facebook an Addition?), and Lesson 9 (Social Networking and Education). Guthrie, Mason-Singh, and Coddington (2012) also confirm that the level of relevance is a starting point for learning the relevance of other texts on other topics in the future.

Emphasizing Important

This component focuses on enhancing the students' values for literacy activities. It is the process of bringing students' attention to the benefits of reading. Generally, a number of students avoid reading because they do not think that it is important to them now or in the future. With the attempt to situate importance of reading to the conceptual theme of the teaching unit, the students raised their estimate of the value of reading. Brief tasks increase perceived value and course achievement (Hulleman et al., 2010), and brief teacher explanations also heightens perceived text value and enhance engagement in reading (Jang, 2008).

Fostering Collaboration

Interpersonal intelligence strategies taught overtly in PIRI. They allowed students to work with their partners or group members in exchanging ideas and sharing expertise based on the reading texts. Team projects such as study maps or poster making were also included. In each 90-minute lesson, PIRI arranged for students to work in whole group, partnerships, and small teams to foster the motivation of pro-social goals for reading. This collaborative reading is particularly

interesting from an L2 standpoint because it has been effective with struggling readers, including language-minority students (Grabe, 2009).

Providing Choice

One of the motivational supports is providing a choice. It enables students to develop self-direction in the classroom. The teacher offers the following kinds of choices within 10-week of PIRI: student suggestions for strategy use for comprehension, student input into topics or sequence of topics, options for demonstrating learning from text, and selecting partners or group members. With these mini-choices provided during reading lessons, they lead students to feel a strong sense of investment and to commit larger amounts of effort to their reading tasks (McRae and Guthrie, 2009; Zhou, Ma and Deci, 2009).

Enabling Success

This could be the most crucial ingredient for boosting engagement in reading. Within PIRI, the first way the teacher enables success is by providing readable texts, comprising materials that students can understand literally, and can relate to other texts that they have read on the topic. In the same way, success can be fostered by the teacher feedback regarding success and helping students set realistic goals for interaction with text.

5.2.2 PIRI and Level of Reading Engagement

The findings of the engagement measurements of the Reading Engagement Index and the reading engagement checklist demonstrated that the level of students' reading engagement was slightly higher after experiencing PIRI. Intrinsic motivation for reading, however, was not developed.

The students developed a stronger sense of self-efficacy and exploit more cognitive strategies according to the post-intervention mean scores of REI. This finding correlated with the study of Schuk and Zimmerman (2007). They found that instruction enabling students to learn to realistic goals setting during reading and evaluate their progress increases self-efficacy and achievement in reading tasks.

From the results of the REI, Item 2 “Reads favorite topics and authors”, and Item 3, “Easily distracted in self-selected reading”, was confirmed that the students’ intrinsic motivation was low. The Item 3 was reverse coded; therefore, the result reflected the opposite meaning. The results are similar to the findings in the studies conducted by Guthrie and Wigfield (2000); Wigfield et al. (2006); Guthrie, McRae, and Klauda (2007); Guthrie, Klauda, and Morrison (2012). Research has clearly documented that students’ motivation for reading and attitudes toward reading decrease over time. Such declines are likely stronger for readers who struggle with reading.

Furthermore, motivation to read is not only important for general academic achievement, but it is also an important predictor of reading comprehension abilities. (Taboda et al., 2009; Grabe, 2009; Guthrie and Wigfield, 2000). Not surprisingly, according to these research studies, the students’ English reading abilities and reading engagement in this study go hand in hand.

Besides, disinterest in reading informational text might be one of the factors undermining students’ reading motivation. Informational text is often considered more difficult to comprehend because it tends to include more technical vocabulary and to focus less familiar and impersonal topics (Varelas and Papaps, 2006; Guthrie, Mason-Singh, and Coddington, 2012). According to the mainstream finding in the field, both high achievers and low achievers dislike information-focused book, but high achievers like reading literature and fiction more than low achievers (Guthrie, Mason-Singh, and Coddington, 2012).

Apart from the motivation factor, the results from the two instruments used in the study do not get along well in terms of social engagement. The self-report REI shows that the students possessed social motivation, but the result is on the opposite side in the reading engagement checklist. There are some factors triggering this obscurity. Firstly, the social engagement in the reading engagement checklist is considered as the quality of the students’ responses. Comments or interactions with eagerness or great enthusiasm are considered as high social engagement. On the contrary, social motivation construct in the REI is assessed by the level of group discussion enjoyment. Hence, these two instruments portray different views of social engagement. Secondly, the measurement administration might cause this mismatch as

McNamara (2011) supports this view that the students' judgments of their reading behavior and the measurement of their performance often do not match. The self-report questionnaire may be skewed in one direction or another because the students lack a clear understanding what comprises good versus poor performance. Besides, the students probably guess answers that are the most socially desirable or best answers.

5.2.3 PIRI and Personal Intelligence Profile

The discussion will be presented according to the intrapersonal and interpersonal intelligence strategies used in this study

5.2.3.1 Intrapersonal Intelligences

Goal setting, monitoring and evaluation strategies, according to the findings, were highly used by the students after experiencing PIRI. This implies that the students possess the ability of planning for reading, monitoring, their comprehension, and checking how text content fit purpose or reading goals. Evidence from reading research has empirically demonstrated the effectiveness of content-based instruction (Guthrie et al., 2004). Schuk and Zimmerman (2007) find that instruction enabling students' learning to set realistic goals during reading and to evaluate their progress increases self-efficacy and achievement in reading tasks. The combination of content and language learning objectives naturally leads to opportunities for project-based learning, the recycling of important skills on a regular basis, the rereading of many text resources, and more realistic tasks for interpreting, integrating, and evaluating information from multiple texts.

Moreover, the findings of this study are similar to what other researchers have reported with respect to relations of MI theory and metacognitive and cognitive strategy use. Mirzaei, Domakani, and Heidari (2013) find that linguistic and intrapersonal intelligences as well as metacognitive and cognitive strategy use are the best predictors of reading comprehension. Israel (2007) also strongly agrees that metacognitive strategies increase readers' comprehension, monitoring of text, and their ability to evaluate the text they are reading.

Although the students' improvement has been made in this study, the levels of the profiles before and after the intervention are at the same level of "somewhat like me". The findings are similar to several studies that low-proficiency students seem to use less metacognitive strategies than high-proficiency ones. Mokhtari, Sheorey, and Reichard (2008) and Sheorey and Mokhtari (2008) examined metacognitive awareness and use of reading strategies based upon students' English proficiency. The findings confirm that more proficient readers, both native English speakers and EFL students were aware of and employed metacognitive reading strategies while less advanced readers in both groups appeared not to be aware of or use the different reading strategies. Besides, Wichadee (2011) investigated the effectiveness of explicit instruction of metacognitive strategies among 40 EFL first-year students in a private university in Thailand. The research results were correlated with the previous research that low proficient students still questioned about strategy instruction.

5.2.3.2 Interpersonal Intelligence

Finding from the observation notes and the PI profiles confirm that the students favor reading in groups. This collaborative opportunities enhance them to listen and to be heard by peers in talking about what they have read, adding to each other's interpretations, raising clarify questions, attempting to synthesize their own brainstorming.

As illustrated in many studies, however, the students are rarely oriented to discussing information-focused books with peers (Guthrie and Coddington, 2009; Wigfield, Cambria, and N. Ho, 2012). On the other hand, the studies focusing on discussion still confirm the importance of student discussions as a primary means for building reading comprehension skills. McKeown and Beck (2004) carried out a mix-method study with six teachers over seven months. They trained the teachers to use Questioning the Author, an approach that emphasizes students' construction of meaning from text by encouraging students to collaboratively grapple with and reflect on what an author is trying to say. The results revealed that sense-making and reading comprehension were promoted by the Questioning the Author approach.

5.3 Implications

An implication of this research result is that if PIRI really improves reading achievement and reading engagement, then it is important to study more closely the variety of instructional practices that influence students' motivation to read during intervention as well as outside instruction.

A practical implication of the main finding in this study is that teachers can attempt to optimize students' reading engagement in the classroom with a realistic expectation that this engagement will increase students' reading comprehension. Simultaneously, if teachers perceive that their comprehension instruction is not highly engaged, or even disengaging, they have reasons to doubt that it will increase students' ultimate reading comprehension levels even though that the instruction involves process of teaching important reading strategies.

5.4 Conclusion

This study has ascertained that PIRI promotes the students' English reading ability and reading engagement. Content literacy that focuses on multifaceted components, namely, language, cognitive, strategic and socio-cultural components should be fostered in EFL classrooms so that the students become more motivated and in reading. Meanwhile, the students should be made accustomed to the process of self-monitoring learning so that they can read with a goal. Therefore, teaching students to know more when and how to use those personal intelligence strategies is important in all EFL classes. In addition, making a causal attribution makes students become aware of their success and failure so that they know how to improve their reading skill to cope with their future reading. Finally, reading engagement should also be encouraged as it is, according to previous research, evidently a significant factor for high achievement. The findings also suggest that reading instruction that is reflective and responsive is likely to increase students' reading ability and confidence in reading.

5.5 Limitation of the Study

Although this study was carefully designed to optimize the internal and external validity, three areas of limitation have emerged and should be considered when interpreting the findings.

1. The sample size of this study was small as it was conducted in a classroom setting. The generalizability of the findings, therefore, should be interpreted with caution.
2. The one group pre-test-post-test research design was used in this study as the students were already assigned to their sections. It was not possible to randomly select the samples out of the population.
3. Since the pilot study was conducted during summer vacation, the researcher could not find the English majors to participate in the intervention. Accordingly, the students in the pilot study were not equivalent to the students in the main study in terms of their reading ability.

5.6 Recommendations for Further Studies

Firstly, it is recommended that future research should extend to investigate a broader sample of students to gain better understanding of the effect of Personal Intelligence Reading Instruction. In other words, different studies employing the same methodology should be conducted. Since the findings from the present study are relevant to its own context, it is interesting to achieve transferability by conducting further studies in other contexts, with local resources, longer period or with other participants.

Secondly, the relationship between reading engagement, PI profiles and reading engagement should be explored in future studies.

Finally, reading engagement in on-line texts should be investigated as today's students have instant access to multiple forms of information through a range of digital media.

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Appendices

Appendix A

English Reading Ability Test (the ERA test)

Objective of the test

The ERA test aims to assess five types of comprehension according to Nuttall's types of question of reading comprehension. There are five types of questions: (a) literal comprehension; (b) reorganization or reinterpretation; (c) inference; (d) evaluation; and (e) word-attack and text-attack skills.

Directions

1. The total time for the test is **25 minutes**.
2. This English Reading Ability Test is for the students attending 1551103 (Paragraph Reading Strategies) course.
3. This test consists of 4 passages. There are **21** multiple-choice questions altogether.
 - Passage 1 contains **6** items
 - Passage 2 contains **6** items
 - Passage 3 contains **5** items
 - Passage 4 contains **4** items
4. There are **9 pages** in the test, along with a separate answer sheet.
5. DO NOT mark your answers in the test. **You must answer on the separate answer sheet.**
 - Mark (X) on the letter of your choice, as shown in the example below.
Example: What does the word “**they**” in line 6 refer to?
 - a) recipes
 - b) Americans
 - c) vegetables
 - d) scientists

Sample Answer

(a) (b) ~~(c)~~ (d)

**** Mark only one answer for each question. ****

Directions: Read the following passages and choose the best answer to each question.

Passage 1 (6 points)

- 1 Sometimes the best medicine is no medicine. It's what doctors call a *placebo*. When the problem isn't serious, they may give it to patients instead of real medicine. A placebo doesn't have any real medicine effect. It may be just a sugar pill. But when a doctor gives a patient a placebo, it often helps.
- 2 How does the placebo work? Scientists say it only works if you believe that it's real medicine. Then, because you expect to feel better, you really do feel better—even if the pill just has sugar in it. However, if you find out that it's only sugar, it won't work for you anymore.
- 3 The effect of a placebo is both psychological and physical. In fact, beliefs and feelings can have physical effects on your body. Scientists saw this in an experiment about pain. The people in the experiment had a painful shot in their face. Then they were given a placebo. But they weren't told it was a placebo; they were told it was a pain killer. Soon the people felt less pain. How was this possible? Their brains began making a natural painkilling chemical.
- 4 Sometimes it's hard to understand how a placebo works. A lot depends on the doctor and the way he or she talks to you. If the doctor seems very certain and uses a serious voice, the placebo is more likely to help.
- 5 Doctors may give a patient a placebo for many kinds of problems that have no clear cause. For example, they are sometimes given for skin problems, for headaches, or for allergies. Studies have shown that placebos can really help in these cases. Doctors also sometimes give a placebo to people who are anxious or depressed. They may be as much improvement after a placebo as after real medicine. And there are two big advantages to a placebo. It has no side effects, and it is inexpensive.
- 6 There are many reasons for doctors to use placebos. However, some doctors have doubts about how well a placebo really works. These doctors prefer to give real medicine, just in case. Other doctors have a different reason for not giving placebos. They don't want to tell lies to their patients. In fact, the placebo effect only works if the doctor tells a lie. If the patient finds out the truth, how can he or she trust the doctor in the future?

1. What is the main idea of the passage?
 - a) Experiments with placebos
 - b) The beliefs about placebos
 - c) How the placebo effect works
 - d) When doctors give medicines

2. When does the placebo effectively work?
 - a) You know it is a placebo.
 - b) You believe it will work.
 - c) Your doctor has tried it.
 - d) You like sugar pills.

3. Which sentence is NOT true about placebos?
 - a) They may work for itchy skin.
 - b) They may work for headaches.
 - c) They do not work for painful conditions.
 - d) They work if the doctor sounds certain.

4. How can a placebo help treat pain?
 - a) It really has a painkiller in it.
 - b) Your doctor also gives you a painkiller.
 - c) It makes you think about something else.
 - d) It leads your brain to make a natural painkiller.

Appendix B

แบบสอบถามการมีส่วนร่วมในการอ่าน (Reading Engagement Index)

ให้นักศึกษาทำเครื่องหมาย (X) ในช่องตัวเลขที่ตรงกับลักษณะนิสัยของนักศึกษามากที่สุด

ข้อความ	ไม่จริง —————▶ จริงที่สุด Very true of me —————▶ Not very true of me				
	1	2	3	4	5
1. ฉันอ่านหนังสือเองโดยไม่ต้องมีใครบังคับบ่อยครั้ง Often reads independently					
2. ฉันอ่านหนังสือเกี่ยวกับเรื่องที่ผมชอบ หรือหนังสือที่แต่งโดยนักเขียนที่ผมชอบ Reads favorite topics and authors					
3. ฉันชอบอ่านหนังสือที่ผมเลือกเอง Easily distracted in self-selected reading					
4. ฉันอ่านหนังสือเยอะมาก Works hard in reading					
5. ฉันอ่านหนังสืออย่างมั่นใจ Is a confident reader					
6. ฉันมีกลยุทธ์ในการอ่าน เช่น เดาคำศัพท์ที่ไม่รู้จักจากบริบท นึกถึงสิ่งที่ฉันรู้เกี่ยวกับเรื่องที่ผมอ่านเพื่อเข้าใจเรื่องได้ดีขึ้น Uses comprehension strategies well					
7. ฉันคิดอย่างลึกเกี่ยวกับเนื้อหาที่อ่าน Think deeply about the content of texts					
8. ฉันชอบแสดงความคิดเห็นเกี่ยวกับหนังสือที่ผมอ่านกับเพื่อนๆ Enjoys discussing books with peers					

Appendix C

Reading Engagement Checklist (Weeks 3, 6, 9)

Student's name _____ Lesson _____

Date _____

Reading Engagement		Comments
Levels	Affective Engagement	
1	นักเรียนดูเบื่อหน่าย หาวนอนบ่อย Displays negative emotion; sighs; looks very bored; prolonged yawn; head completely down on desk	
2	นักเรียนก็มีสีหน้าเฉยๆแต่สายตาเฝ้ามองผู้สอนและเพื่อนร่วมห้อง พูด ด้วยเสียงราบเรียบ Even expression; head partially down but may still be looking toward teacher/classmates; responds in monotone	
3	นักเรียนมีท่าทางพึงพอใจและสนใจ น่าเสียงมีความภาคภูมิใจและ สนใจ Smiling (perhaps just briefly); looks pleased; appears interested; tone suggests some pride/interest	
4	นักเรียนส่งเสียงที่แสดงถึงความสนใจ เช่น อืม ใจ หรือ พยักหน้าตอบ รับคำพูดของผู้สอน Grins broadly or suddenly; tone suggests great excitement or interest; makes noises (e.g., "ooh") which suggest great interest	
Levels	Behavioral Engagement	
1	ผู้สอนต้องบอกให้ทำงาน และ/หรือนักเรียนหาวบ่อย Distracted by something unrelated to task; head completely down on desk (i.e., not participating in task); teacher has to tell student to get to work; prolonged yawn	
2	นักเรียนยังคงทำกิจกรรมอยู่ แต่ดูไม่มีส่วนร่วม ตามองครูแต่ไม่ได้ทำ ตามที่ครูพูด Hard to judge whether student is truly behaviorally engaged;	

Reading Engagement		Comments
	not off-task, but does not appear particularly involved; eyes may or not be on teacher, but does not seem to really be following discussion or actively engaged in activity; may be slouching	
3	นักเรียนทำกิจกรรมโดยเห็นได้จากสายตาและท่าทางตอบสนองต่อผู้พูด เช่น การยกมือ Clearly on-task, as suggested by eye movement and posture towards speaker; raising hand (perhaps just briefly); writing; speaking; clearly listening (suggesting that student is attentive at least behaviorally)	
4	นักเรียนชูมือ โบกมือเพื่อตอบคำถาม ส่งเสียงที่แสดงถึงความกระตือรือร้นและการมีส่วนร่วม หรือสนใจร่วมกิจกรรมอย่างตั้งใจมาก Waving hand; hand “shoots” into air to answer question; making noises that suggest great enthusiasm and eagerness to participate; otherwise seems “super-engaged”	
Levels	Cognitive Engagement	
1	นักเรียนไม่ให้ความสนใจต่อคำถามหรือการสอน ไม่มีส่วนร่วมในกิจกรรมใดๆ Response reveals student was not paying attention to question or instructions; completely off-task (suggesting that student is not thinking about given task)	
2	ตัดสินใจได้ยากว่านักเรียนมีส่วนร่วมในการเรียนรู้หรือไม่ นักเรียนเปิดหนังสืออย่างรวดเร็วโดยไม่ได้มองเนื้อหา Hard to judge whether student is truly cognitively engaged; flipping book pages quickly without really looking at any	
3	นักเรียนยกมือ เขียน พูด ตอบสั้นๆ (สองสามคำ) Raising hand; writing; speaking; provides brief answer (e.g., one or two words); reading; eye movement and posture suggest that student is following along with activity; clearly listening (suggesting that student is processing information)	
4	จากคำตอบแสดงให้เห็นว่านักเรียนใช้ความคิดอย่างมาก และคำตอบยาว Response reveals student was thinking very hard; response is extensive (Note: student must speak in order to receive this rating)	

Reading Engagement		Comments
Levels	Social Engagement (ปฏิสัมพันธ์ระหว่างนักเรียนกับนักเรียนในสถานการณ์ที่ต้องตอบครูหน้าชั้นเรียน) (based primarily on student-student interactions or situation in which response to teacher is public)	
1	นักเรียนหยอกล้อ หัวเราะ หรือวิจารณ์คนอื่น <i>Teacher prompts social interaction and students do not respond; student teases, laughs at, or criticizes another</i>	
2	นักเรียนหันไปหาเพื่อนที่พูดอยู่ นักเรียนยกมือไม่สูงเมื่อตอบคำถามของครู นักเรียนถูกเรียกโดยไม่ได้ยกมือ และตอบคำถามแบบไม่ได้เตรียมตัว <i>Teacher prompts social interaction and interaction that results is minimal; student turns toward classmate that is speaking; student half-raises hand when responses are solicited by the teacher; student is called on without raising hand and responds readily; social interaction not explicitly warranted by current activity and student does not initiate it on his/her own</i>	
3	นักเรียนเป็นผู้เริ่มปฏิสัมพันธ์ ครูเป็นผู้เริ่มปฏิสัมพันธ์และนักเรียนได้ตอบในเชิงบวกอย่างกระตือรือร้น นักเรียนยกมือ ต้องการมีส่วนร่วมในการตอบคำถามและวิพากษ์วิจารณ์ <i>Students exchange activity-related comments; students initiate interaction; teacher initiates interaction and student interacts positively and/or with eagerness; student fully extends hand, reflecting desire to share response or unsolicited comments</i>	
4	นักเรียนแสดงออกคล้ายกับข้อสาม แต่ปฏิสัมพันธ์โดยรวมมีความกระตือรือร้นและ/หรือมีการโต้ตอบอย่างต่อเนื่อง <i>Similar to 3, but interaction is extended or marked overall by great enthusiasm/intensity</i>	

Appendix D

แบบสอบถามเชาว์ปัญญาส่วนบุคคลทางการอ่าน (Personal Intelligence Inventory)

ให้นักศึกษาทำเครื่องหมาย (X) ในช่องตัวเลขที่ตรงกับลักษณะนิสัยของนักศึกษามากที่สุด

ข้อความ	ไม่ตรงกับ ลักษณะของ ฉันเลย 1	ใกล้เคียงกับ ลักษณะ ของฉันอยู่ บ้าง 2	ตรงกับ ลักษณะ ของฉันเป็น ส่วนใหญ่ 3	ตรงกับ ลักษณะ ของฉัน มากที่สุด 4
1. ฉันชอบอ่านหนังสือคนเดียว I like to work alone without anyone bothering me.	1	2	3	4
2. ฉันชอบจดบันทึกย่อเพื่อช่วยให้เข้าใจเรื่องที่ย่าน I like to keep a diary.	1	2	3	4
3. การอ่านหนังสือกับเพื่อนจะทำให้ฉันเข้าใจมากขึ้น I get along well with others.	1	2	3	4
4. เมื่ออ่านไม่เข้าใจ ฉันจะหยุดอ่าน In an argument I will usually walk away until I calm down.	1	2	3	4
5. ฉันเข้าใจความรู้สึกของเพื่อนๆ เสมอ I have several close friends.	1	2	3	4
6. เมื่อฉันไม่เข้าใจเรื่องที่ย่าน ฉันจะขอให้เพื่อนช่วย If something breaks and won't work I try to find someone who can help me.	1	2	3	4
7. เมื่อต้องท่องจำสิ่งใด ฉันมักจะจินตนาการถึงสิ่งนั้น If I have to memorize something I tend to close my eyes and feel the situation.	1	2	3	4
8. ฉันไม่ชอบอ่านหนังสือในที่ที่มีคนพลุกพล่าน I don't like crowds.	1	2	3	4
9. เมื่ออ่านไม่เข้าใจ ฉันจะคิดว่าสิ่งนั้นคุ้มค่ากับการอ่านหรือไม่ If something breaks and won't work, I wonder if it's worth fixing up.	1	2	3	4
10. ในการนำเสนอผลงานกลุ่มจากเรื่องที่ย่าน ฉันชอบเสนอสิ่งที่ไม่เหมือนใคร ซึ่งมักจะมาจากความรู้สึกของฉันเอง	1	2	3	4

For a group presentation I like to contribute something that is uniquely mine, often based on how I feel.				
11. ฉันจะช่วยกระตุ้นให้เพื่อนๆ ในกลุ่มมีความกระตือรือร้นในการนำเสนองานกลุ่มจากเรื่องที่เราอ่าน For a group presentation I like to help organize the group's efforts.	1	2	3	4
12. ฉันไวต่อการรับรู้ข้อบกพร่องในการอ่านของผู้อื่น I'm quick to sense in others' reading difficulties.		2	3	4
13. ฉันรู้จุดเด่นและจุดด้อยในการอ่านของฉัน I know what I am good at and what I am weak at.	1	2	3	4
14. ฉันอธิบายเกี่ยวกับเรื่องที่เราอ่านให้เพื่อนๆ เข้าใจได้ I like helping teach other students.	1	2	3	4
15. ฉันชอบอ่านหนังสือกับเพื่อนๆ ในกลุ่มของฉัน I like working with others in groups.	1	2	3	4
16. เพื่อนมักขอคำแนะนำจากฉันในเรื่องการอ่าน เพราะฉันเป็นนักอ่านที่ดี Friends ask my advice because I seem to be a natural reader who understands the writer's message.	1	2	3	4
17. เมื่อต้องท่องจำสิ่งใด ฉันจะให้เพื่อนตั้งคำถามกับฉันในเรื่องที่เราอ่านเพื่อช่วยในการจำ If I have to memorize something I ask someone to quiz me to see if I know it.	1	2	3	4
18. เมื่อมีข้อโต้แย้งเกิดขึ้นในเรื่องที่เราอ่าน ฉันมักจะขอให้เพื่อน หรือคนที่ตัดสินใจได้มาช่วย In an argument I tend to ask a friend or some person in authority for help.	1	2	3	4
19. ฉันมีความมุ่งมั่น และมีอิสระในการอ่าน I find that I am strong-willed, independent and don't follow the crowd.	1	2	3	4
20. ฉันชอบที่ตัวเองเป็นนักอ่าน I like myself (most of the time).	1	2	3	4

Appendix E

PIRI Classroom Observation Form

Instructor _____

Date _____

Course Title _____

Time _____

Lesson _____

Number of students _____

Intrapersonal Intelligence	Incidents	Comments
Sensing others' feeling		
Collaboration		
Exchanging explanations		

Appendix F
Student Worksheet

Name _____ Student Code _____

PART I

Complete the following chart before, during, and after you read.

1. What do you *know* about the topic of the reading?
2. What do you *want* to know about the topic?
3. How can you find out the information?
4. What did you learn?

Know	Want to know	How to learn	Learned

PART II

List problems and solutions you found while you read.

Problems	Solutions

Appendix G

PIRI Instructional Manual and Sample Lesson Plan

Rationale

Reading in a foreign language is more challenging because the act of reading is complex and demanding on the brain. It is not just someone learning to read in another language; rather, L2 reading is a case of learning to read with languages (Grabe, 2009). Individuals vary in the way they process information. For example, some students prefer studying in groups and like to discuss information with others, whereas others learn better in independent setting. However, it seems to be impossible for students, as adults, to work in their preferred mode always.

Personal Intelligences Reading Instruction (PIRI) probably bridges the gap between English reading and students' learning styles. Gardner (1983) identifies two personal intelligences—intrapersonal intelligence involves an examination and knowledge of one's own feeling, motivation, and behavior, while interpersonal intelligence involves an ability to interpret and understand the intentions and desires of others. To illustrate, intrapersonal intelligence helps readers set reading goals, monitor comprehension, and evaluate their own style of learning. Interpersonal intelligence, on the other hand, helps provoke active learning through working collaboratively with others, sensing others' feeling, and exchanging explanations.

PIRI is an instructional approach including aspects of thinking and learning that emphasizes its highly personalized and self-reflective nature. The purpose of PIRI is to promote students' reading awareness while reading academic or school-related materials. Such awareness entails readers' knowledge of strategies for processing texts, the ability to monitor comprehension, and the ability to adjust strategies as needed. This concept offers great insights into how learners manage their cognitive activities to achieve comprehension before, during, and after reading.

With the combination of personal intelligences and the four phases of teaching for long-term reading engagement: Observe and Personalize, Search and Retrieve, Comprehend and Integrate, and Communicate to Others (Guthrie & Cox, 2001), students should be able to become engaged and strategic readers.

Teacher's role

In order for PIRI to reach the students, teachers need to know how to deliver it. Thus, personal intelligence strategies, developed as part of explicit strategy instruction while students are reading the texts, are accompanied by consistent teacher modeling, teacher scaffolding and extensive practice.

Theoretical Framework

The personal intelligences theoretical framework is developed on the basis of the two personal intelligences—intrapersonal and interpersonal intelligences.

Intrapersonal Intelligence

Intrapersonal intelligence involves three practices—goal setting, monitoring, and evaluation. The description of the three practices is as follows:

Goal setting allows students to create a target or plan for what they want to accomplish or achieve after reading. Goals are seen as regulators of actions and goal-setting serves as a significant source of task motivation. To better facilitate reading, a product goal of answering questions and a process goal of learning to use the strategy will be set for different reading tasks.

Monitoring is a major reading strategy that actively engages students in self-observing and self-recoding occurrences of target behavior. Once a student sets a goal, he or she needs to develop a plan to meet the goal so that the self-monitoring process can be implemented to support goal completion.

Evaluation can help students after completing a task. Judging for themselves how well they have learned material or performed on a task helps students identify their strengths and weaknesses so they can do even better the next time. This practice also helps assess how well a strategy works for them, so students can decide which strategies they prefer to use on particular tasks.

Interpersonal Intelligence

Interpersonal intelligence involves three practices—sensing others’ feeling, collaboration, and exchanging explanation. The detail of each practice is elaborated as follows:

Sensing others’ feeling gives student an opportunity to exploring a topic by discovering why others acted in a certain way or made certain decisions. It also helps students express understanding from someone else’s standpoint or life experience.

Collaboration allows students to understand and work with others. Sharing information, contributing specialized expertise, and building on each other’s thinking are skills students need to attain. In addition, interpersonal skills, such as listening, taking turns, speaking in a suitable voice, and encouraging full participation can be encouraged, which enhances the productivity and enjoyment of group work.

Exchanging explanations is to promote active learning where students have an equal opportunity to mutually help each other and to ensure that explanatory help is consistently shared. That is, students who know more should be able to share their explanations, whereas students who do not know should be encouraged to ask and benefit from explanation.

Teaching Phases

The four teaching phases of CORI—Observe & Personalize, Search & Retrieve, Comprehend & Integrate, Communicate to Others—are adopted in order to manage learners’ cognitive activities before, during, and after reading. The comparison between the common lesson frameworks and the PIs teaching phases is illustrated in the table below.

Common lesson frameworks	PIs teaching phases
Pre-reading	Observe & Personalize Search & Retrieve
While-reading	Comprehend & Integrate
Post-reading	Communicate to Others

From the table above, the four PIs teaching phases can be elaborated as follows:

Pre-reading activities

Observe & Personalize

The purpose of this phase is to develop students' awareness that their prior knowledge can be applied to the topic of the unit. Koda (2007) asserts that successful comprehension is achieved through the integrative interaction of extracted text information and a reader's prior knowledge. Empirical evidence demonstrates that background knowledge is a major factor in the reading comprehension process (Long, Johns, and Morris, 2006; Rapp et al., 2007; Stanovich, 2000; Zwaan and Rapp, 2006). Background knowledge, or schema, is organized and stored in the reader's mind. It is just another way to describe the information stored in our memory systems. Given an important role of the reader's schema, reading comprehension is basically a combination of text input, appropriate cognitive processes, and the information that we already know (Grabe, 2009). There is no debate that readers with considerably more background knowledge on a topic read a text differently and more efficiently.

Observe & Personalize phase allows teachers to encourage metacognitive knowledge, or awareness of activities which assist in learning a language. The kinds of tasks that are involved and the importance of having a particular intelligence to assist in reading are also included.

Search & Retrieve

The Search & Retrieve phase helps students seek for what they need or want to understand exactly. Skimming and scanning skills are the two dominant techniques constituting this learning phase. Skimming involves searching for the main ideas the writer wants to get across, while scanning means searching for specific details of interest to the reader. Preview questions help readers to skim and scan more easily. The questions often provide many clues and require simple "true/false" or "yes/no" responses or a choice from a set of answer. Moreover, charts to complete, lists to write, diagrams to fill out, and other mechanisms also provide clues about what kind

of general points or specific details the learners need to pick up in a reading passage. These help learners get the idea quickly and efficiently.

In addition, the Search & Retrieve phase involves using resources to find out the information. Encyclopedias, travel guides, magazines, Internet websites, or general books can provide useful background information so that readers can better understand a particular reading text.

While-reading activities

Comprehend & Integrate

In the Comprehend & Integrate phase, the teacher uses explicit instruction to teach a particular personal intelligence (e.g., goal setting, monitoring, evaluation, sensing others' feeling, collaboration, exchanging explanations, etc.). In teaching, the teacher explicitly names the intelligence to be learned, indicates how the intelligence is used with a specific task, and tells why the intelligence is important for reading. This type of instruction increases the students' metacognitive awareness of the task requirements and of the connection between strategy use and learning (Chamot and O'Malley, 1994).

Post-reading activities

Communicate to Others

In this phase, students reflect on their intelligence use and appraise their success in using it as well as the contribution the Personal Intelligences makes to their reading comprehension. Students are given either individual or group assignments depending on the intelligence they are practicing. The teacher can ask students to write down the personal intelligence strategies they used during an activity or classroom assignment, indicate how the strategies work, and note any changes in the strategies from the way in which they were originally described in class. The teacher then guides a full class discussion of the strategies that seem most useful for the assignment. Moreover, students might compare their own performance on a task completed without using the personal intelligence strategies and a similar task in

which they have applied the PI strategies. In addition, students can design and create a method for sharing the information learned by peer teaching, creating a poster, or making a public service announcement.

Lesson Plan

Course: Paragraph Reading Strategies (1551103)

Level: Undergraduate

Lesson Duration: 2 hours

Materials: Southern Thai Cuisine

Objectives: Students will be able to check comprehension by using monitoring strategies individually and in small groups.

Teaching Procedures

Topic	Reading	PIs Practices	Teaching Phases	Time	Tasks	Procedures
FOOD	<i>A Taste of the South</i>	Monitoring Collaboration	Observe & Personalize	15-20 Min	matching/ personalizing doing a survey	<ul style="list-style-type: none"> - Ss match pictures with names of food. - Ss guess the name of each dish in the provided column. - Ss select one menu from the provided list and explain why they like it. -Ss ask 5 people about what they like most in the provided menu and why they like it.
			Search & Retrieve	20 Min	skimming/ scanning	-Ss look for information in the reading to answer the questions concerning southern dishes.
			Comprehend & Integrate	45-50 Min	reacting to the text/ identifying reading problems/ problems solving	<ul style="list-style-type: none"> - Ss are divided into groups of five. - Ss read the text and answer the questions. - T discusses the answers with the class. -Ss list their reading problems occurred while reading. - Ss list solutions that help them get through the text.
			Communicate to Others	30 Min	making a study map to show reading problems and solutions	<ul style="list-style-type: none"> -T monitors groups. - Ss create their own study map regarding their reading problems and solutions in order to develop self-monitoring skills. -Ss share and discuss their study map with their group members.

Appendix H**Classroom observation transcription***Week 9: When Chillies are Too Hot*

1. T: Ok, class, before we begin reading the lesson today, do you remember something about chillies we did read in Lesson 2?
2. Ss: Yes.
3. T: What are the common ones used in Thai cooking?
4. Ss: Several (quite a number of students answer) Prik khi noo, Prink chee fah.
5. T: Ok, then. Let's have a quick look at the title of this passage—*When Chillies are Too Hot*.
6. S1: What we should do when chillies are too hot.
7. T: Yah. First, have an overview at the text. Look at the title of the text and have a quick look at the overall text. Then do the Observe and Personalize activity. Circle T or F. Ok? This activity helps activate your background knowledge. The first statement is about capsaicin. Do you remember capsaicin?
8. Ss: Yes (with the majority shaking their heads).
9. T: Great! What is it?
10. S2: It is something putting the heat in chillies (some students shake their heads).
11. T: Right. Would it help if you drink ice-cold water?
12. S1: It only help temporarily. (laughing)
13. T: So, the first statement, is it true or false?
14. Ss: False. (Many nod heads to show approval)
15. T: Yes. How about the second one?
16. Ss: True. The core contains the highest concentration of capsaicin.
17. T: Number 3, is it true? Lime juice can help clean your hands off traces of capsaicin?
18. Ss: True/ False (the students are not certain; some students answer “true”, while the others say “false”; several students nod heads).

19. T: So, we don't know if this statement is true or false then. Let's move to the next one. The last statement. Is it false or true?
20. Ss: True/ False (the students are not certain; some students answer "true", while the others say "false").
21. T: Hmm..We can't say it for sure. We have two statements that we don't know the right answer. We're going to read the article to find out the answer, then we will get back to complete the activity later.
Ok, class, I'd like to put you in groups of five or six.
[The students move their chairs to sit in groups]
22. T: In your group, you are going to read this passage paragraph by paragraph to match each paragraph with the given headings. There are five paragraphs to read in this article.
23. S3: We have to find a heading for each paragraph?
24. T: Yes.

[The students read the text together; ask each other; clarify their answer]
25. S4: Ajarn, I don't have a dictionary today. Poor me. There are lots of words I don't know.
26. T: Just guess. You already roughly know the content of the passage.
(The student shakes her head)
27. S5: Ajarn, are the headings already in the right order?
28. T: Definitely not. They are not in the right order. You need to find out.
29. S3: I finished. Could you please check my answer?
30. T: We will do it altogether.
[The class takes about 5 minutes to read the passage]
31. T: Ok, now, all of you have finished the first round of reading. What do you learn from the first paragraph? What is it about?
32. S1: Drinking water or beer only temporarily relieves the burning.
33. T: Which word tells you that it helps temporarily?
34. S1: Temporarily (laughing).
35. T: Good. So, what is the heading of this paragraph?

36. Ss: E. How do you deal with a burning mouth from a very hot chili pepper?
37. T: Right. How about paragraph 2?
38. Ss: D. Capsaicin is oil soluble.
39. S1: Capsaicin is not water soluble.
40. T: Good. How about paragraph 3?
41. Ss: A. Don't touch the inner core of chilies.
42. T: Why?
43. S4: It burns your skin.
44. T: Yeah. What should you do if you got chili burns? The answer is in the next paragraph.
45. S5: Wash your hands with soap.
S1: Vinegar.
46. T: Right. Strong vinegar would help.
47. S1: What is "vinegar"?
48. T: What is vinegar? มันคือ "น้ำส้มสายชู" ค่ะ.
(the student shakes her head)
49. T: Okay. The last paragraph.
50. Ss: C. How do you deal with roasting chilies?
51. T: What should you do?
52. S4: Turn on the fan.
53. T: Definitely. Make sure there is plenty of ventilation.
Now, can you answer the two statements in the Observe & Personalize section?
54. Ss: Yes (with the majority shaking their heads).
55. T: Lime juice can help you?
56. S2: Yes. True.
57. T: Good. Next. Red wine can prevent you from chili burns?
58. Ss: No. False (with the majority nodding their heads).
59. S1: Lime juice and vinegar help.

60. T: Yah. Let's go to the next section. What reading problem occurred while you are reading. I think now you're familiar with this kind of table . What seems to be your problem?
61. S5: Vocabulary. We can't remember.
62. T: Why?
63. S5: We just can't remember (laughing).

Appendix I

List of Experts Validating Research Instrument

1. The Instructional Manual and Lesson Plan

- 1.1 Rachadaporn Janudom, Ph.D.
(Prince of Songkhla University)
- 1.2 Maneerat Ekkayokkaya, Ph.D.
(Chulalongkorn University)
- 1.3 Paradee Praphruetkij, Ph.D.
(King Mongkut's University of Technology North Bangkok)

2. The Reading Engagement Checklist

- 2.1 Associate Professor Duangkamol Traiwichitkhun, Ph.D.
(Chulalongkorn University)
- 2.2 Piyawan Punmongkol, Ph.D.
(Chulalongkorn University)
- 2.3 Chitchon Pratontep, Ph.D.

3. The English Reading Ability Test (ERA Test)

- 3.1 Associate Professor Thanyapa Chiramanee, Ph.D.
(Prince of Songkhla University)
- 3.2 Sutthirak Sapsirin, Ph.D.
(Chulalongkorn University)
- 3.3 Assistant Professor Supakorn Phoocharoensil, Ph.D.
(Thammasat University)

4. The Personal Intelligence Inventory

- 4.1 Suphawat Pookcharoen, Ph.D.
(Thammasat University)
- 4.2 Usaporn Sucaromana, Ph.D.
(Srinakharinwirot University)
- 4.3 Assistant Professor Jintavee Monsakul, Ph.D.
(Chulalongkorn University)

Biography

Miss Salila Vongkrachang is an EFL teacher at the Foreign Language Department, Faculty of Humanities and Social Sciences, Songkhla Rajabhat University. She received her Bachelor's Degree in English Language and Literature from the Faculty of Liberal Arts, Thammasat University in 2004. In 2007, she obtained her Master's Degree in English as an International Language from Chulalongkorn University. Her research interests center around second language reading, motivational factors for English language learning, and language learning technology.

Conference Presentations

- Vongkrachang, S. (2013). *Enhancing EFL learners' reading ability through Personal Intelligences*. Thailand TESOL. Chiang Mai, Thailand.
- Vongkrachang, S. (2013). *Designing a reading instruction to promote PIs for EFL learners*. Poster Presentation. IATEFL. Liverpool, United Kingdom.
- Vongkrachang, S. (2012). *Effects of Personal Intelligence Reading Instruction on English Reading Ability and Reading Engagement of Thai University Students*. CHE- USDC Congress V, Thailand, 14-16 November, 2012.
- Vongkrachang, S. (2011). *Effects of Personal Intelligence Reading Instruction on English Reading Ability and Reading Engagement of Thai University Students*. Poster Presentation. CHE- USDC Congress IV, Thailand, 14-16 September, 2011.