

Developing English L2 Critical Reading and Thinking Skills through the Pisa Reading Literacy Assessment Framework: A Case Study of Thai EFL Learners

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ABSTRACT

This study aimed to investigate the use of the PISA reading literacy assessment framework (PRF) to improve EFL learners' critical reading and thinking skills. The sample group, selected by the random sampling technique, included 36 EFL learners from a university in Northeastern Thailand. The instruments consisted of 8 PRF-based reading lessons, a 27-item-PRF-based reading test used as a pre-test and a post-test, and a questionnaire of their attitude toward the designed lessons. The statistics used for data analysis were percentage, mean, standard deviation, and a paired sample t-test. The results revealed that before the intervention, the students' English reading proficiency was low as is evident from their low pre-test scores (M=14.00). They did fairly well for the literal questions (M=6.11), but poorly for the interpretative questions (M=4.89) and the critical questions (M=3.00), respectively. This means that the students could comprehend the texts but they could hardly interpret or evaluate them. However, after the intervention, they could do much better as their post-test scores were significantly higher (M=18.01). They could comprehend (M=6.78), interpret (M=6.00) and evaluate (M=5.25) well. The paired sample t-test results also confirmed this as the students' post-test scores for overall, literal, interpretative, and critical questions were significantly higher than the pre-test scores at $p < 0.001$. This indicates that after the intervention, their reading skills had improved. In terms of their attitude, most students were satisfied with the lessons and the instruction, particularly because they were given background information of texts and knowledge about different types of the PRF questions. It may thus be concluded that the designed lessons can help improve students' English critical reading proficiency and may be used as a teaching model for improving EFL learners' critical reading and thinking skills.

Keywords: critical reading; critical thinking; reading proficiency; PISA reading framework; reading literacy

INTRODUCTION

Critical reading and thinking are essential for academic achievement in higher education and developing students' critical thinking skills is regarded as a highly important educational goal in many societies around the world (Zin et al. 2014, Davies & Barnett 2015, Wilson 2016, Stupplea et al. 2017, Larsson 2017). To be successful in class, students are required to read extensively for knowledge and information from textbooks, research articles, and other sources and think critically about what they have read. Anderson et al. (1985) viewed reading as a complex meaning-construction process that requires the coordination of many interrelated sources of information. Similarly, Farrell (2009) emphasized that reading is a complex process that "involves conscious and subconscious actions by the readers" (p. 14). It is thus undeniable that reading is a complex task even when it is done in the first language (L1). However, when reading is done in a second/foreign language (L2), the task inevitably becomes much more complex and when it comes to such a higher level of reading as critical reading, the difficulty and complexity is doubled or even tripled as the reader requires not only a higher level of L2 language proficiency but also critical thinking skills.

Critical reading involves not only meaning construction but also critical thinking. Both critical reading and critical thinking are closely linked for we can hardly read critically without thinking critically (Medina & Pilonieta 2006, Abdelhalim 2011, Mayfield 2014, Lee 2015). In L2 critical reading, the EFL/ESL readers use their L2 vocabulary knowledge, their

prior knowledge and experience of the world, their “L2 world”, in particular, and their L2 linguistic knowledge, which includes, for example, text-decoding and linguistic knowledge to construct the meaning of the text and they then use their critical thinking skills to interpret, analyse, criticize, reflect, and evaluate the text for deeper understanding. Thus, their L2 language proficiency level and critical thinking ability certainly affect their critical reading ability. To improve the EFL/ESL learners’ critical reading ability, we, therefore, need to find the teaching instruction and learning model that provides the learning of how to construct the text’s meaning effectively and how to think and interact with the text critically.

The Programme for International Student Assessment (PISA) is an international test that aims to evaluate education systems worldwide by testing 15-year-old students’ mathematical, science, and reading literacy. In testing reading literacy, PISA has designed a reading literacy assessment framework to construct the reading test. In the PISA reading literacy framework (PRF), critical thinking plays an important role (OECD 2017). Although the PRF is designed for constructing a reading assessment to measure L1 reading literacy, it may also be used as a model for designing L2 teaching and learning instructions because the PRF essentially expresses the core components of the reading processes that are applicable to the reading in any language. That is, to assess reading literacy, the PRF measures the readers’ abilities to access and retrieve the information from the text, to interpret and integrate the information in the text, and to reflect and evaluate the text they have read. These abilities, particularly the interpretation, integration, reflection, and evaluation abilities, require critical thinking skills. Although the PRF has been introduced for over a decade, a limited number of research studies on the PISA reading literacy framework have been conducted. Thus, this study adopted the framework and attempted to examine how and the extent to which the framework can be applicable to second language reading instruction. This research can provide English L2 teachers and learners an alternative teaching method that can be used in their reading classes and critical reading practices in general.

LITERATURE REVIEW

ENGLISH L2 LEARNING AND TEACHING IN THAI HIGHER EDUCATION

English is taught in Thailand as a second/foreign language. Due to the country’s demand for internationalization, English inevitably becomes a necessity in Thai education at all levels. As a result, the Thai Ministry of Education has included a foreign language, principally English, as one of the compulsory subjects for primary and secondary education. Although at the tertiary level of education, English is not compulsory, many higher education institutions include the English subject as part of their programs. Despite the effort of institutions to improve students’ English skills, the English proficiency level of the university students does not seem to be satisfactory. To elevate the students’ English language skills, the Office of the Higher Education Commission (OHEC), which is the government organization that oversees the higher education institutions in Thailand, has recently issued an official announcement to all higher education institutions in Thailand to equip their students with a working knowledge of English language and implement an English exit exam with the students before their graduation (OHEC 2016).

Due to the high demand for English proficient graduates in the career market, most, if not all, higher education institutions in Thailand offer a degree program in English. Unlike the English programs in the UK and the USA, where students mainly study English literature or linguistics, most of the English programs offered by the Thai universities aim to produce efficient English language users. In addition, the ultimate goal of the students enrolling in the

English programs is to become proficient in English, expecting to gain a better chance for employment and higher salary after graduation. Thus, most of the courses offered in such a program are for skill-based English. The courses on English literature are limited and are mostly elective. Generally, the English literary courses are not popular among the students as the students always avoid them if they have other choices. Besides, in the past decade, the English program's curriculum has been revised several times to suit the students' needs and many of the literary courses were replaced by skill-based English, ESP, and EAP courses.

As a result, the students become fairly proficient in English, but they have limited knowledge on English literature and critical thinking skills, in particular. This fact is evident from their poor performance in reading classes and their avoidance to enrol in an elective course that involves extensive and critical reading such as English literary courses. However, the ability to read proficiently and critically is necessary for higher education and is significantly related to how much a student can achieve in his or her personal and professional life after graduation. Thus, this study attempted to apply the cognitive reading processes as shown in the PRF to design the reading lessons and reading assessment to enhance English L2 learners' critical reading skills and promote a positive attitude towards the English reading lessons or courses.

CRITICAL READING AND CRITICAL THINKING

Many researchers strengthen relationships between critical reading and critical thinking. According to Collins and Cheek (1993), critical reading requires evaluative judgements of the text made through the reader's reasoning ability. Shihab (2011) added that reading activates the reader's mental processes, and schemata and critical thinking play an important role in reading comprehension. Similarly, Aloqaili (2012) saw a strong relationship between reading comprehension and critical thinking, and Lee (2015) mentioned that "reading literacy", which also includes critical reading, "shares the core elements in critical thinking" (p. 182). Moreover, Wilson (2016) argued that critical thinking processes may be used for critical reading pedagogy; students should not only be taught how to read but also how to think critically and reflectively as they read. Although critical reading and critical thinking are closely related, they are not exactly the same. One may think critically without reading, but he cannot read critically without critical thinking. That is, critical reading cannot be done without critical thinking.

Critical reading makes use of such processes of critical thinking as analysis, synthesis, and evaluation (Lee 2015). When critical readers or critical thinkers received new information through reading for the readers and through listening or reading for the thinkers, they first make an initial understanding of it, then interpret and integrate the received information to form a deeper understanding, and subsequently reflect on and evaluate the information by applying their knowledge and experience from the outside sources. A higher level of cognitive activities is required when the comprehending process is more complex; thus, critical reading can help readers become independent thinkers (Collins & Cheek 1993). At the interpretative and critical reading comprehension, critical thinking is, therefore, inevitable.

CRITICAL READING AND READING COMPREHENSION

In the processes of reading for comprehension, Grabe & Stoller (2011) divided between low-level comprehension and high-level comprehension. The low-level comprehension involves the linguistic processes such as word recognition, syntactic parsing, and semantic formation while the high-level comprehension includes the mental processes such as joining the information to form a meaning of the text, inferencing, interpreting and evaluating of the text

according to the readers’ goal, fillings, and background expectation. Essentially, at the low-level comprehension, readers identify and retrieve the information within the text and use their linguistic knowledge to make meaning and simple interpretation of words, phrases, and sentences. Later at the high-level comprehension, readers extend their interpretation and integration for deeper understanding by applying their own knowledge and experiences to the text and making critical, reasoned judgments of the text (Li et al. 2016). In the present study, it is the reading for attaining the high-level comprehension that are regarded as critical reading and such critical reading makes use of the critical thinking processes.

THE PISA READING LITERACY ASSESSMENT FRAMEWORK

The PISA reading literacy assessment framework is not totally new as it adopts the cognitively-based reading theories by viewing reading as a complex cognitive process that involves the interaction between the reader and text to construct meaning. When making the meaning of a text, the readers deploy various mental processes and strategies dependent upon the contexts, purposes, and types of the text being read. As a result, in constructing a PISA reading literacy test, OECD designs three major task characteristics, which include the so-called *situation*, *text*, and *aspect*. Situation represents “the range of contexts or purposes for which the reading takes place”; text is “the range of material that is read”; aspect refers to “the cognitive approach that determines how readers engage with a text” (OECD 2017).

It is the *aspects* of reading in the PISA reading literacy framework that becomes the main interest of this study. These aspects deal with the cognitive activities of readers in making meaning of a text. The PISA reading literacy framework divides three main aspect categories of reading: access and retrieve, interpret and integrate, and reflect and evaluate. Accessing and retrieving refer to the processes in which readers go the information space where required information is located and select the required information; interpreting and integrating are the processes in which readers make meaning by bringing pieces of information together; and reflecting and evaluating involve a higher level of critical thinking processes in which readers connect information inside a text to the readers’ knowledge and experience outside the text and make a judgement of the text for its quality and appropriateness. The reading tasks and questions in the PISA reading literacy test are designed following the framework and outlined in the diagram below:

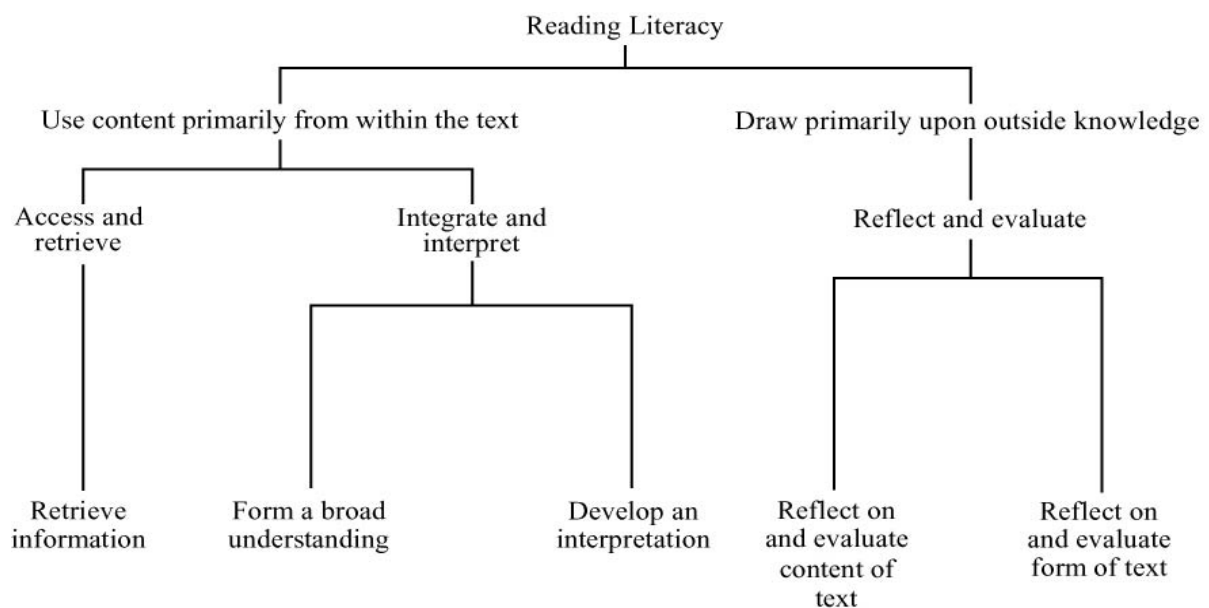


FIGURE 1. Types of questions in the PISA reading literacy assessment (OECD 2017)

From the diagram above, access and retrieve, and interpret and integrate questions require readers' understanding of the information within a text, while reflect and evaluate questions mainly require the readers' outside knowledge. The access and retrieve aspect is more associated with what Collins and Cheek (1993) called literal comprehension while the interpret and integrate aspect is associated with interpretative comprehension, both of which require a lower level of critical thinking skills. However, the reflect and evaluate aspect, with critical comprehension, requires a higher level of critical thinking skills. It is obvious that the three aspects of reading are not mutually exclusive but rather interrelated and "semi-hierarchical". That is, the readers may not be able to interpret or integrate the information in the text without first accessing and retrieving the information; they may not be able to reflect or evaluate the text without first interpreting or integrating the information (OECD 2017). In short, to interpret a text, one must first be able to comprehend it, and to criticize the text, one must first be able to interpret it.

In this study, the PRF is used as a model for the construction of the reading practices and the reading assessment. The designed reading practices and test aim to teach and train the students' abilities to access and retrieve, interpret and integrate, and reflect and evaluate the information from reading texts with the belief that if EFL learners with sufficient English L2 proficiency are trained following the PRF framework, they will be able to read proficiently.

THE PURPOSES OF THE STUDY

The study aimed to investigate the use of the PISA reading assessment framework to improve EFL learners' critical reading and thinking skills. The purposes of the research are twofold:

1. To examine the extent to which the PRF-based reading practices help improve the EFL learners' critical reading and thinking skills.
2. To investigate the EFL learners' attitude towards the designed reading practices and instruction.

The study is useful for both EFL teachers, who teach critical reading, and EFL learners, who desire to develop their critical reading and thinking skills. Moreover, the study offers an alternative method of teaching and learning critical reading and thinking skills using a cognitive-based learning approach, structured in the PISA reading literacy framework. Since PISA is new, previous research on the application of the PISA reading literacy framework to the EFL teaching and learning is limited.

METHODOLOGY

THE PARTICIPANTS

The sample group consisted of 36 third year English-major students enrolling in the English Literature for Children course during the second semester of the 2016 academic year at a university in Northeastern Thailand. They were selected by the random sampling technique from groups of English major students because the study requires the participants with an adequate level of English proficiency as English L2 critical reading can hardly be done without an adequate level of English L2 proficiency (Grabe & Stoller 2011). All of them were Thai (L1) native speakers, learning English as a second/foreign language (L2). They were of mixed ability, but as they were third-year English major students, their English

proficiency was from A2 to B1 CEFR levels. The number of the students remained at 36 from the beginning until the end of the experiment.

THE INSTRUMENTS

THE 8 PRF-BASED READING PRACTICES

Since the course under study was a literature-based course, to avoid interfering with the core content of the course, a PRF-based reading practice lesson were constructed as a supplement to a course lesson. The 8 PRF-based reading practices were integrated into the 8 course lessons and were administered during the reading practice section of each lesson. Constructed under the PISA reading literacy assessment framework, the reading practices introduced and familiarized the students with the core concepts of the reading processes shown in the PISA reading literacy framework. The reading practices enabled the students to train their abilities to access and retrieve, interpret and integrate, and reflect and evaluate after reading. Each reading practice follows the same procedure starting from introducing the topic to the students, answering pre-reading questions, reading texts, defining new words, discussing, interpreting, analysing, criticizing the texts, and finally answering the PISA-like questions on the texts. The type of texts to be read in each reading practice was dependent on the content of each lesson, namely literary genres being discussed in the corresponding lesson. For example, if the lesson is on children songs, the texts to be read on the reading practice of this lesson are selected children songs. In order to have the students focus mainly on reading rather than vocabulary, they were allowed to use a dictionary and were instructed to read the texts at a comfortable pace focusing on overall comprehension.

THE PRF-BASED ENGLISH READING PROFICIENCY TEST

The 27-item reading proficiency test was written in English and constructed following the PISA reading literacy assessment framework. The test consisted of 3 continuous reading passages with 9 questions for each passage: 3 access and retrieve questions, 3 interpret and integrate questions, and 3 reflect and evaluate questions. The reading texts were taken and the questions were adapted from *Take the Test*, the sample questions from the PISA assessments by OECD. The test questions were either in the multiple-choice or written formats. The test was used as the pre-test to measure the reading proficiency of the students before the intervention and as the post-test to examine whether and to what extent the students' reading proficiency had developed after the intervention.

THE ATTITUDE QUESTIONNAIRE

The attitude questionnaire was used to measure the students' attitude towards the PRF-based reading practices and learning instruction. Evaluated and validated by experts in the field, the questionnaire adopted a 5-point Likert rating scale ranging from "strongly agree" to "strongly disagree". It was written in English and was divided into three sections. The first section dealt with demographic information of the students including age, gender, GPA, and the number of years spent learning English. The second section assessed the students' attitude towards the PRF-based reading practices and instruction. Finally, the last section included an open-ended question in which students were asked to point out what they like about the PRF-based reading practices. For the second section, there were a total of 10 questions divided into 4 areas: the design of the reading practices (3 items), the PRF-content (3 items), the critical thinking improvement (2 items) and the reading proficiency improvement (2 items). The criteria for the attitude questionnaire analysis is as follows.

- M 4.51-5.00 = strongly agree
M 3.51-4.50 = agree
M 2.51-3.50 = neither agree nor disagree
M 1.51-2.50 = disagree
M 1.00-1.50 = strongly disagree

RESEARCH PROCEDURE

The experiment took one semester of 16 weeks, which is approximately 4 months. The course was taught for 3 hours a week. Since the course consisted of 8 lessons, it took approximately two weeks per lesson. The students were informed of the objectives of the study. The first week of each lesson was devoted mainly for the literature-based course contents while the first hour of the second week was used for the lesson review and the remaining two hours were spared for the administration of the PRF-based reading practice of the corresponding lesson. Thus, the constructed reading practices were delivered for 2 hours every other week for a total of 8 weeks. The pre-test was administered on the first week, which was one week before the reading practice of the first lesson, while the post-test and attitude questionnaire were administered one week after the reading practice of the last lesson. Each reading practice followed the same procedure of instruction: the teacher first introduced the students to the topic and asked the students the pre-reading questions (20 minutes). Then the students were given texts to read silently; they were allowed to use a dictionary or discuss with peers (30 minutes). After that the teacher led the discussion on the texts asking access and retrieve questions that led to the basic comprehension of the texts; all unknown words were defined for the students at this stage (30 minutes). Then the teacher led the discussion for a higher level of comprehension leading to the interpretation, and critical analysis of the text (30 minutes). After that, the PISA-like questions on the text were given to the students; they worked on the questions individually (30 minutes). Finally, the teacher asked the students individually to answer the questions and correct answers were given (30 minutes).

DATA ANALYSIS

The data from the pre-test, post-test, and questionnaire were analysed descriptively by calculating frequency, percentage, mean, and standard deviations and a paired sample *t*-test was used to compare the English L2 reading proficiency of the students before and after the intervention. All data were analysed using SPSS 22 for Windows. The attitude questionnaire was analysed quantitatively and qualitatively. The 5-point Likert rating scale questions were descriptively determined, while the qualitative data from the open-ended question was analysed by using a thematic analysis method.

RESULTS

As the research developed reading practices based on the PISA reading literacy framework and investigated the effectiveness of the reading practices and the attitudes of the students towards the reading practices, the results were divided into two sections: the effectiveness of the reading practices and the students' attitude.

THE EFFECTIVENESS OF THE PRF-BASED LEARNING INSTRUCTION

The effectiveness of the reading practices was measured by using a pre-test and post-test to show the improvement of the students’ reading and critical thinking skills before and after the intervention. Due to the fact that the sample group was selected randomly, the paired sample *t*-test was used to analyse the data together with the descriptive statistics. The results of the statistical analysis were shown in Table 1 below.

TABLE 1. Students’ reading proficiency before and after the intervention

	M	SD	<i>t</i>	<i>df</i>	<i>p</i>
Overall					
Pre-test	13.97	2.77	-14.55	35	.000
Post-test	18.03	2.27			
Literal					
Pre-test	6.11	.950	-4.83	35	.000
Post-test	6.78	.832			
Interpretative					
Pre-test	4.89	1.28	-5.98	35	.000
Post-test	6.00	.793			
Critical					
Pre-test	2.97	1.55	-12.30	35	.000
Post-test	5.25	1.18			

The descriptive statistics in Table 1 indicates that the students’ reading proficiency after the intervention ($M=18.03$, $SD=2.27$) was higher than that before the intervention ($M=13.97$, $SD=2.77$). The paired sample *t*-test analysis also reveals that the reading proficiency of the students after the intervention was significantly higher than that before the intervention ($t[35] = -14.55$, $p < .001$). When examining the students’ literal, interpretative, and critical comprehension skills separately, it was found that the students’ literal, interpretative, and critical comprehensions after the intervention ($M=6.78$, $SD=0.83$; $M=6.00$, $SD=0.79$; $M=5.25$, $SD=1.18$) were higher than those before the intervention ($M=6.11$, $SD=0.95$; $M=4.89$, $SD=1.28$; $M=3.00$, $SD=1.62$). The paired sample *t*-test analysis also emphasizes that the literal, interpretative, and critical comprehensions of the students after the intervention were significantly higher than those before the intervention ($t[35]=-4.83$, $p < .001$; $t[35]=-5.98$, $p < .001$; $t[35]=-12.30$, $p < .001$).

THE STUDENTS’ ATTITUDE TOWARDS THE PRF-BASED READING PRACTICES

An attitude questionnaire was used to measure the students’ opinion towards the reading practices. The questionnaire was divided into 3 sections: demographic information, attitude towards the reading practices, and an open-ended question. The results were summarized as frequencies and percentages of the responses to each survey item.

DEMOGRAPHIC INFORMATION

Of the 36 students in the sample group, 9 people were male and 27 people were female, with ages over 20 years old. All of the students had studied English for more than 5 years. About 14 people reported that they had studied English for over 10 years and 7 people said they had studied English for over 15 years.

ATTITUDE TOWARDS THE PRF-BASED READING PRACTICES

The 5-point Likert rating scale questions were descriptively determined. The total frequency and percentages of each item were calculated and the mean scores and standard deviations of the variables were compared in Table 2 below.

TABLE 2. Students' attitude towards the PRF-based reading practices

Questions	M	SD
<i>1. The design</i>		
1.1 The reading practices are clear and easy to follow.	4.31	0.58
1.2 I enjoy the activities in the reading practices.	4.11	0.62
1.3 Sharing my ideas with the peers and teacher helps shape my critical thinking skills.	4.36	0.49
<i>2. The PRF-content</i>		
2.1 I understand more about the principles and purposes of reading.	3.78	0.42
2.2 Literal comprehension is very important for interpretative and critical comprehensions.	4.25	0.44
2.3 Interpretative comprehension is also important for critical comprehension.	3.94	0.41
<i>3. Critical thinking improvement</i>		
3.1 The reading practices help make my reading more focused.	3.64	0.59
3.2 The reading practices help improve my critical thinking skills	3.64	0.49
<i>4. Reading proficiency improvement</i>		
4.1 The reading practices give me a clearer picture of how to read systematically.	3.72	0.45
4.2 The reading practices help improve my reading proficiency.	3.92	0.28

OPEN-ENDED QUESTION

The students were asked to mention what they liked about the PRF based reading practices. Their responses to the question were simply prescribed into categories and generated a frequency tally of the range of feedbacks using coding classification. Some students gave more than one response and all responses were counted and calculated by frequency and percentage in Table 3 below.

TABLE 3. Students' satisfaction on the PRF-based reading practices

Thematic Coding	Frequency	Percentage
Pre-reading information	24	32.43%
The PRF-like questions	18	24.33%
Peer assistance	14	18.92%
Group discussion	10	13.51%
Classroom activities	8	10.81%

DISCUSSION

As the research developed reading practices base on the PISA reading literacy framework and investigated the effectiveness of the designed reading practices and the attitudes of the students towards them, the results were divided into two sections: the effectiveness of the reading practices and the students' attitude.

THE EFFECTIVENESS OF THE READING PRACTICE

The students' post-test score was statistically significantly higher than their pre-test score indicating that the students' overall reading proficiency had significantly improved after the intervention. The results confirmed the effectiveness of the treatment in improving the students' reading comprehension skills. When examining the reading comprehension skills separately, it was also found that the literal, interpretative, and critical comprehensions of the

students have also improved. The significant gain in the mean scores of the interpretative and, particularly, critical comprehensions emphasizes the effectiveness of the reading practice in improving the students' critical reading and thinking skills. The reading practices enabled the students to train their abilities to access and retrieve, interpret and integrate, and reflect and evaluate after reading. The exposition of the students to the reading practice and questions provided them with a purposive reading scenario—reading to achieve answers to the questions. Goals set by the structured questions drive the readers to engage not only with the text they are reading, but also with a different text they have read, to compare and integrate information across multiple texts (OECD 2017). In addition, the paired sample *t*-test results revealed that the students' post-test scores were significantly higher than the pre-test scores, confirming the effectiveness of the PRF-based reading practice. The results of the study clearly emphasize that the PRF-based reading practice with structured comprehension questions can help improve the students' reading proficiency. Thus, the principles of the PISA reading literacy framework can be used effectively to design EFL reading classroom activities to improve learners' overall reading comprehension skills.

THE STUDENTS' ATTITUDE TOWARDS THE PRF-BASED READING PRACTICES

In response to the second purpose of the study, the questionnaire on students' attitude towards the PRF-based reading practices was administered to the students in the last class. It was apparent that the students considered the PRF-based reading practices helpful and useful for their English learning in general and were highly satisfied with the reading practices. They found the design of the reading practices clear and easy to follow ($M = 4.31, SD = 0.58$). They also enjoyed the activities in the practices ($M = 4.11, SD = 0.62$) as they allowed them to share ideas with their friends and teacher in class ($M = 4.36, SD = 0.49$). For the PRF-content, they highly liked it as it helped them to learn about the principles and purposes of reading and made them understand that they needed to acquire literal comprehension before they can successfully reach interpretative and critical comprehensions ($M = 4.25, SD = 0.44$). The students' opinion on this issue confirms the semi-hierarchical nature of literal, interpretative, and critical comprehension as mentioned in the PISA reading literacy framework (Collins & Cheek 1993, OECD 2017). That is, in order to achieve critical and interpretative comprehension of a text, learners should first be able to decode the text and gain literal comprehension. Besides, the students also found that the reading practices helped improve their critical thinking skills ($M = 3.92, SD = 0.28$); this is probably because the after-reading questions gave them more focused reading and most of the questions aimed at improving their critical thinking skills. Overall, the students agreed that their reading proficiency had improved after learning through the PRF-based reading practices.

For the open-ended question, the students were asked which feature of the PRF based reading practices they like. The students most frequently mentioned that their capability to know some background information of the text before reading it resulted in increased comprehension of the text they read (32.43% of the responses). The finding is in line with Zin et al. (2014) who found the knowledge of the content and text genre crucial for students' meaning construction. The PRF based reading practices emphasize the interactive nature of reading and the constructive nature of comprehension by viewing the previous knowledge of the topic to socially and culturally derived cues of the text which is essential for a higher level of comprehension (OECD 2017). Besides, students seem to be less collaborative when they are reading unfamiliar topics or themes (Gunawardena et al. 2017). This finding thus confirmed the importance of the background information and pre-reading knowledge in facilitating students' reading comprehension. In addition, a great number of students showed their preference of the PRF-like questions (24.33% of the responses) because the questions

gave them the clues to literal, interpretative, and critical comprehension. Many students said that their capability to consult with peers helped strengthen their understanding and confidence in reading (18.92% of the responses). This finding is in line with the previous research carried out by Morcom (2016) and Gunawardena et al. (2017), reporting that peer collaboration is effective in classroom learning. Finally, a fair number of students viewed that group discussion and other class activities facilitated them to read more successfully (13.51% and 10.81% respectively).

CONCLUSION AND IMPLICATIONS

This research examined the effectiveness of the PRF-based reading practices in improving the EFL learners' reading and critical thinking abilities. The PISA reading literacy framework divides reading literacy into three levels of comprehension: literal comprehension: access and retrieve, interpretative comprehension: integrate and interpret, and critical comprehension: reflect and evaluate (Collins & Cheek 1993, OEDC 2017). These three levels are interdependent and are not mutually exclusive. The PRF-based reading practices were thus designed to train the students to achieve literal, interpretative, and critical comprehensions through different sets of questions. It was found that the PRF-based reading practices were effective in improving the students' reading and critical thinking skills because the post-test scores of the students were statistically significantly higher than the pre-test scores. In terms of the students' attitude towards the reading practices, most students liked the reading practices very much. They found the practices easy to follow and the activities were enjoyable and fruitful as they were allowed to share ideas with the teacher and friends. Most students understood that they could hardly interpret or evaluate a reading text unless they first achieve literal comprehension of the text. The current study provides some implications for teachers and practitioners, both pedagogically and theoretically. Teachers of reading can refer to this study to refine their lesson plans by providing students with enough background information of reading texts and leading the students to have enough literal comprehension of texts before they are allowed to proceed with critical comprehension practice. The findings of this research suggest that the teacher should first prepare the students with sufficient vocabulary and grammatical knowledge so that they could literally comprehend the text before they could read and think critically about the text. In addition, as the PRF based reading practices provides learners with various levels of reading and thinking, they can be adapted or used by EFL teachers in an EFL reading classroom to improve the students' reading comprehension and critical thinking skills.

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