



Using Instructional Scaffolding and Multimodal Texts to Enhance Reading Comprehension: Perceptions and Attitudes of EFL Students

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Abstract

This study investigates the perceptions and attitudes of English as a Foreign Language (EFL) students towards using instructional scaffolding and visual texts to enhance reading comprehension. The theoretical framework of this study is underpinned by the notions of scaffolding and multiliteracies. Thirty-four EFL undergraduate students studying an Informational Technology major at a Thai university were selected to participate using a purposive sampling method. During the study interventions, the researcher conducted three stages of reading activities (pre-reading, while reading, and post-reading) using instructional scaffolding techniques and multimodal texts. The findings of this study revealed that most EFL students perceived the teacher's instructions and multimodal texts such as visual texts, photos, images, and pictures to enhance their reading comprehension. In addition, this study found that the EFL students believed their positive attitudes towards using multimodal texts and learning to read with peers can assist with reading comprehension. Thus, the pedagogical implications of the results of this study are that EFL teachers should be aware of the advantages of multimodal literacies in the digital era for developing student reading comprehension.

Keywords: Instructional scaffolding; multimodal texts; reading comprehension; EFL students; perceptions; attitudes

1. Introduction

Reading comprehension involves the complex process of meaning acquisition from the text being read (Saifullah, 2021, p. 96). Students' reading comprehension is improved when teachers are interactive, ask questions about text structure, link texts to background knowledge, and engage students in asking questions (Ukranetz, 2015, p. 18). However, reading in English can be difficult for EFL learners as it is more complex than reading in their naïve language (Fitzgerald & Graves, 2005). This is problematic for comprehension success as it is more difficult for teachers to offer guidance and support

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because they cannot easily access the reader's thoughts (Safadi & Rebabah, 2012, p. 3). In turn, many students who cannot access appropriate support and guidance from the teacher may be unsuccessful EFL readers.

In Thailand, EFL pedagogy tends to follow a traditional teaching approach that focuses on grammar-translation and lecture-based strategies (Rawengwan & Yawiloeng, 2020). In addition, the EFL classroom in Thai universities tends to offer limited supportive learning materials to students. In classrooms, Thai undergraduate students have few opportunities to interact with the teacher and their peers to learn and share their knowledge of English. In addition, reading texts in EFL reading classrooms are primarily presented in black and white with few colourful images. Consequently, students can demonstrate low motivation and interest in engaging with the text, and less successful reading comprehension. Developing reading comprehension skills is more difficult for EFL students since most are passive learners who have inadequate reading strategies (Rawengwan & Yawiloeng, 2020). As Kennedy and Chinokul (2020) mentioned, a high affective filter makes students unmotivated when they lose interest in reading or struggle to accomplish complex reading tasks. Therefore, effective instructional methods should enhance EFL students' reading comprehension in the digital era.

Recent studies have focused on how students may overcome difficulties in reading comprehension by proposing instructional scaffolding and multimodal texts in EFL reading classrooms. Warner and Dupuy (2018) suggest the emergence of multiliteracies has resulted in challenges in foreign language teaching. They highlight that scholars and instructors must address the various ways that students can imagine connecting with the world outside the classroom setting if foreign language education is to take learners seriously as legitimate users of the language. Moreover, Kasch (2018) proposed new multimodal designs for foreign language learning from an ecological perspective. The author mentioned that providing help to struggling learners by providing various modalities is a potential solution to improving reading comprehension. Nevertheless, little attention has been devoted to investigating instructional scaffolding and multimodal texts to enhance reading comprehension in the EFL context. Therefore, the aim of this study is to investigate the perceptions and attitudes of Thai students towards using instructional scaffolding and visual texts in an EFL reading classroom.

2. Literature Review

2.1 Scaffolding to enhance learning in sociocultural contexts

Scaffolding refers to “temporary and adjustable support that enables students to accomplish a task that would be impossible without that scaffold or to accomplish a task more fully or more easily than they could without the scaffold” (Graves & Graves 2003, as cited in Fitzgerald & Graves, 2005, p. 69). According to learning principles within a supportive learning environment, scaffolding can emerge during teacher-student and student-student interactions to support learners to complete their tasks independently. When learning within the zone of proximal development, students have the opportunity to receive scaffolding from various scaffolding sources in the classroom including experts, teachers, or more knowledgeable peers, equally knowledgeable peers, less knowledgeable peers, and inner resources which are also referred to as self-access (Walqui, 2006). The scaffolding resources potentially serve seven functions, namely recruitment, simplifying the task, direction maintenance, marking critical features, frustration control, demonstration, and feedback (Wood et al. 1976, as cited in Brockley, 2012; Danli, 2008, 2009). These seven scaffolding functions show how it enhances the learning process within rich supportive environments. Notably, the various scaffolding functions used by different scaffolder types in the classroom play an essential role in assisting students while learning with others. As such,

scaffolding may enhance the student's "ability to self-regulate their behaviour, including language use and learning" (Danli, 2008, p. 16).

2.2 Roles of instructional scaffolding in EFL pedagogy

Educational researchers emphasise the critical roles of scaffolding in EFL pedagogy by focusing on teacher scaffolding, peer scaffolding and material scaffolding to enhance second language (L2) acquisition. According to Ji and Luo (2019), scaffolding teaching refers to the way the teacher utilises appropriate strategies or aids to guide instructions on how to complete the task. As such, it enables students to master, create, and internalise the knowledge and skills they have gained to perform higher level cognitive processes. In ESL classrooms, Kim (2003) studied the instructional scaffolding methods of two ESL teachers which included modelling, feedback, task-structuring, and evaluation. Given that teacher scaffolding plays an essential role in the learning process, educational researchers have examined both teacher and student scaffolding in EFL classrooms. Danli (2008) found that teacher-student and student-student interactions in the EFL classroom had the most significant impact on learning grammatical forms and that they provided high-quality scaffolding functions. The scaffolding strategies include recruitment, task simplification, direction maintenance, critical feature creation, frustration control, demonstration, and feedback. In sum, scaffolding is a concept that has both conceptual and practical implications for teaching and educational research (Verenikina, 2003). Therefore, there is a call for research to identify how instructional scaffolding may be employed as a teaching and learning strategy to promote quality teaching in educational contexts.

2.3 Instructional scaffolding to enhance reading comprehension

Reading comprehension involves a complex cognitive process, language competency, and metacognitive process (Rawengwan & Yawiloeng, 2020, p. 34). As such, it is not uncommon for EFL readers to experience difficulties in comprehension when reading texts written in a L2. In addition, reading comprehension requires vocabulary and syntax knowledge; thus, readers must have the ability to perceive the exact nature of the passage being communicated (Salem, 2017, p. 98). For EFL students, inadequate knowledge of the L2 vocabulary can be an obstacle to learning English (Yawiloeng, 2020). Understanding English texts is more complex than learning English vocabulary and many researchers have attempted to examine ways to overcome this pedagogical problem. In turn, *instructional scaffolds* are increasingly viewed as crucial to assist learners to understand and comprehend the reading text in combination with teacher assistance (Salem, 2017). As Park (2021) mentioned, reading's power stems from the interconnected information and literacy abilities that students can apply across disciplines to improve general understanding.

Many types of instructional scaffolding may be employed to assist English language learners to acquire the target language. Walqui (2006), for instance, has suggested six types of instructional scaffolding; namely, modelling, bridging, contextualising, schema building, developing metacognition, and re-representation. Haraqi (2017) emphasised that Walqui's instructional scaffolding can assist students to engage in the learning process after they become active learners, intrinsically motivated learners, and low anxiety learners. Regarding the scaffolding of students' comprehension of a text, Clark and Graves (2004) suggested three stages of reading comprehension instruction including pre-reading which is motivating, establishing background knowledge/text-specific information, and setting goals; during-reading which is reading to students and silent reading; and post-reading, which includes questioning, small-group discussion, writing, and working with art. As Clark and Graves (2004) indicated, learners can become competent with the predicting strategy by engaging in these instructional scaffolding reading activities.

Previous studies have emphasised instructional scaffolding to enhance the reading comprehension of English language learners. Abdul-Majeed and Muhammad (2015) investigated the use of scaffolding strategies on EFL students for their impact on reading comprehension achievement. In the experimental group, the researcher aimed to connect students' background knowledge using KWL (Know – Want to Know – Learned) graphic organisers, collaborative learning, and self-monitoring. The study uncovered that scaffolding strategies enhanced student reading comprehension. According to Abdul-Majeed and Muhamma (2015), the use of scaffolding strategies in EFL reading classrooms “provided supportive environment until students became confident, independent and proficient in using reading comprehension strategies” (p. 106).

Kazazoglu (2020) conducted a mixed-method study to investigate the effects of screen reading on the reading comprehension of Turkish undergraduate students in an EFL university context. The study uncovered that the students gained the highest scores in the printed text exams compared to the plain digital and hypertext exams. However, the Turkish students had the highest percentage of positive perceptions on hypertext reading exams in terms of “joyful, colorful, attractive, fun, comprehensible, easy, motivating, not ordinary, time-saving, and energetic” (Kazazoglu, 2020, p. 464). Although the students demonstrated reading comprehension of the printed texts, Kazazoglu (2020) suggested that future curriculum studies should pay more attention to reading texts which contain links to text pictures and hypertext.

Nurfaiqoh (2021) conducted classroom action research to investigate how peer scaffolding improved the reading comprehension of tenth-grade students. Nurfaiqoh implemented peer scaffolding during before-reading activities, during-reading activities, and after-reading activities in the reading classroom. The findings of this study revealed that the use of the peer scaffolding strategy enhanced the students' reading comprehension skills by building prior knowledge, forming new knowledge, and providing positive feedback to students.

2.4 Multimodality in EFL pedagogy

In the context of EFL pedagogy, using multimodality to stimulate students can enhance their learning interest and memory to gain knowledge and comprehension (Ji & Luo, 2019). Ji and Luo (2019) identified multimodal symbols in teaching as pictures, videos, audios, texts, and languages. The scholars highlighted that use of multimodality to appeal to multiple senses can stimulate students' interest, memory, and attention to the relevant information. Consequently, they can acquire knowledge and improve comprehensive quality (Ji & Luo, 2019). Thus, multimodal learning models are proposed for EFL teaching and learning based on the assumption that “learners can comprehend better learning when content material is presented in words and pictures” (Mayer, 2001, as cited in Farrias et al., 2007, p. 178). According to Brown and Lapadat (2009), multimodal teaching involves presenting visuals, sound, drama, and text. For English teachers to build a suitable scaffold for students, Ji and Luo (2019) suggest they provide multimodal auxiliary scaffolding to students using multimodal teaching resources to build knowledge scaffolds, create psychological scaffolds, encourage peer interaction, and set up multimodal comprehension. Fernandez-Fontechan and colleagues (2019) investigated scaffolding in the science classroom via visual thinking to promote multimodal scaffolding. The researchers emphasised that visual thinking techniques involving multimodal resources can deal with recurring problems in content and language integrated learning (CLIL) instruction.

Researchers propose that multimodal texts can help learners with reading problems and scaffold readers to gain reading comprehension. According to Savic (2020), multimodal texts such as picture books that incorporate visual messages into the language play a significant role in L2 reading. Fitzgerald,

Higgs, and Palincsar (2020) defined multimodal texts by providing examples of graphic novels, picture books, textbooks, maps, images, and infographics which related to textual meaning-making processes. Fitzgerald and colleagues (2020) mentioned that such multimodal non-digital texts can assist diverse learners to develop comprehension skills. Moreover, Abraham and Farias (2017) suggested that “multimodal texts more effectively support L2 reading by providing input that caters to different learning styles and that they are familiar, authentic, and contextualized to the learners' lives” (p. 66). From this view, critical multimodal reading practices, multimodal texts, or visual reading materials enhance the comprehensible input of abstract concepts and understanding of the print text (Abraham & Farias, 2017). In brief, visual reading texts can scaffold learners' reading comprehension because the visuals enable students to connect more immediately with the written text. As revealed in the literature review, however, there have been few previous studies to focus on the effectiveness of instructional scaffolding and multimodal texts on reading comprehension from EFL students' perspectives. In addition, teaching instructions in EFL reading classrooms using both text-based and visual-based reading strategies tend to be overlooked. Thus, this study aims to fill these research gaps.

2.5 Research questions

1. What are the EFL students' perceptions of using instructional scaffolding strategies on L2 reading comprehension?
2. What are the EFL students' attitudes towards multimodal texts to enhance reading comprehension?

3. Method

This is a quantitative study conducted through a questionnaire to gain insight into the EFL students' perceptions and attitudes towards teachers' instructional scaffolding and the use of visual texts, photos, images, and pictures in the reading activities.

3.1 Participants

The participants of this study included 34 EFL students (25 males and 9 females; ages 20-21 years) studying at a university in the north of Thailand. The participants were chosen using a purposive sampling technique. Their pretest scores from a Common European Framework of Reference for Languages (CEFR) test included beginner level – CEFR A1 (24 students), elementary level – CEFR A2 (eight students), and intermediate level – CEFR B1 (two students). The participants enrolled in the English for Specific Purpose (ESP) subject as an elective English course during their second year of study. The EFL students' majors were Information Technology (IT) and dual degrees of both IT and English. The EFL students studied EFL and spoke Thai as their mother tongue.

3.2 Reading activities and instructional scaffolding

To collect data from the reading activities, the researcher adopted the instructional scaffolding originally contributed by Walqui (2006); namely, modelling, bridging, contextualising, schema building, and developing metacognition (as cited in Harraqui, 2017; Safadi & Rebabah, 2012). The researcher applied these instructional scaffolding strategies to enhance the students' reading comprehension while they engaged in the English reading activities.

During the *pre-reading stage*, the *modelling* strategy was employed to allow the EFL students to engage with a good model for reading texts and to imitate reading activities in the model with their

peers. The teacher assisted the students to activate their prior knowledge of vocabulary and the texts using texts presented together with visual texts, photos, images, and pictures. Moreover, the *bridging* strategy was employed to help the students to *bridge* their prior knowledge and understanding with the reading texts.

During the *while-reading stage*, a *contextualising* strategy was used to allow the students to work with the reading texts by coming together with images and text organisations to motivate and enhance their reading comprehension. In addition, *schema building* was also used to encourage the students to read the non-digital multimodal text, including visual texts, photos, images, and pictures. At this stage, peer scaffolding strategies were encouraged to assist the students to learn how to read with their peers.

During the *post-reading stage*, *developing metacognition* and representing text was used to facilitate the students to practise reading individually with direct guidance and to share their understanding of the text with their peers during the reading activities.

3.3 Instructional reading materials

The researcher adopted five reading texts from the Learn English Teens website contributed by the British Council. This website provides free access to English reading, writing, and listening online exercises (British Council, 2021). After gaining permission from the website to use their material, the researcher chose five articles about topic with which the Thai EFL students were familiar. The five reading texts in the intermediate CEFR B1 level included various titles and text types: job advertisements, emails, notices on the noticeboard, friendship quiz, and tips for students. The B1 reading texts were chosen according to the Thai undergraduate students' English proficiency standard as non-English major students at the university level. The reading texts were nondigital multimodal texts which contained visual texts, photos, images, and pictures. However, audio files were excluded from this study.

The reading materials were structured into four parts. The first part included the text title and photos or images to introduce the text. The second part included the preparation stage for vocabulary related to the reading topic. The reading instruction was to match the words with the pictures. The third part included a reading comprehension exercise to match the words, complete a gap fill task, and to respond using true or false.

Table 1. Instructional reading materials in intermediate B1 level

Reading titles	Types of multimodal texts	Types of questions in the exercise	
		Vocabulary	Reading comprehension
1. Job adverts	Visual texts, photos, and images	• Matching the words and photos/images	• Matching • Gapfill
2. Foreign exchange emails	Images	• Matching the words and photos/images	• True or False • Gapfill
3. Notice board	Visual texts, photos, images, and pictures	• Matching the words and pictures/images	• True or False • Gapfill
Reading titles	Types of multimodal texts	Types of questions in the exercise	
		Vocabulary	Reading comprehension
4. Friendship quiz	Visual texts, photos, and images	• Matching the words and pictures/images	• True or False • Gapfill

5. Tips for being a super-organised Student (blog post)	Visual texts, photos, images, and pictures	• Matching the words and pictures/images	• True or False • Gapfill
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3.4 Research instruments

3.4.1 Attitudes questionnaire

The attitude questionnaire evaluated the EFL students' perceptions and attitudes towards the teacher's use of instructional scaffolding strategies and visual texts during pre-reading, while-reading, and post-reading activities. The 5-point Likert scale questionnaire was designed according to the aims of this study (5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree, and 1 = strongly disagree). The interpretations were described according to the following criteria: 4.21 - 5.00 (strongly agree), 3.41 - 4.20 (agree), 2.61 - 3.40 (neutral), 1.81 - 2.60 (disagree), and 1.00 - 1.80 (strongly disagree). There were two sections in the questionnaire. The first section was used to elicit the EFL students' perceptions towards instructional scaffolding during the EFL activities (Table 1). The second section was used to assess the EFL students' attitudes towards the use of multimodal texts (Tables 2, 3, and 4).

3.5 Data Collection Procedures and Data Analysis

The data collection procedures were conducted after all the research instruments were approved by the Thai university; ethical approval number 2.2/012/64. After the participants signed the consent form to participate in the study, they were asked to complete the 50-item pre-test to measure and identify their prior knowledge of English. The researcher then conducted the reading activities using instructional scaffolding and peer scaffolding strategies to enhance reading comprehension. After engaging in the reading activities over a seven-week period, the EFL students were asked to fill out the attitude questionnaire. Finally, the participants' responses to the questionnaire were analysed and interpreted using the Statistical Package for the Social Science (SPSS).

4. Results

The scope of this research paper is to reveal the perceptions and attitudes of EFL students towards the use of instructional scaffolding and multimodal texts during English reading activities. The participants were 34 Thai undergraduate students studying at a Thai university. The study was conducted over seven weeks. In the first week, the participants were asked to complete the pre-test and engage in English reading activities from the second week until the sixth week. During the seventh week, the EFL students were asked to respond to the attitude questionnaire, which was used to elicit their perceptions and attitudes towards using instructional scaffolding and multimodal texts in EFL reading activities.

4.1 Research question 1:

What are the EFL students' perceptions towards the instructional scaffolding strategies during the reading activities?

The questionnaire was distributed to measure the EFL students' perception levels of the teacher's instructional scaffolding after the English reading activities as shown in Table 2:

Table 2. Students' perceptions towards instructional scaffolding during the pre-reading activity

Instructional scaffolding	Mean	Std. Deviation	Interpretation
1. Teacher activated students' prior knowledge of English vocabulary using various teaching strategies.	4.47	.507	Strongly agree
2. Teacher used various materials (e.g., visual texts, photos, images, and pictures) to motivate students to engage in reading activities.	4.41	.701	Strongly agree
3. Teacher explained English vocabulary and text using both Thai (L1) and English (L2).	4.38	.652	Strongly agree
4. Teacher guided students to use reading strategies such as skimming and scanning the texts.	4.35	7.34	Strongly agree
5. Teacher used various teaching strategies to assist students predict vocabulary meanings and concepts from the texts.	4.29	.579	Strongly agree
6. Teacher's instructions assisted students to share ideas and opinions with peers about the vocabulary and the texts.	4.26	.666	Strongly agree

Table 2 shows most EFL students strongly agreed (items 1, 2, 3, 4, 5, and 6) with the teacher's instructions to help their reading comprehension. As can be seen, the finding revealed that the EFL students' perceptions towards instructional scaffolding were rated at a high level of agreement. Item 1 "teacher activated students prior knowledge of English vocabulary using various teaching strategies" achieved the highest mean score ($M = 4.47$, $SD = .507$). However, item 6 regarding their perceptions toward "teacher's instructions assisted visual texts, photos, images, and pictures" achieved the lowest mean scores ($M = 4.26$, $SD = .666$).

To determine how the EFL students perceived the instructional scaffolding while engaged in the while-reading activities with the teacher and a peer, they were asked to rate their perceptions as shown in Table 3:

Table 3. Students' perceptions towards the instructional scaffolding during while-reading activities

Instructional scaffolding	Mean	Std. Deviation	Interpretation
7. Teacher's instructions provided visual texts, photos, images, and pictures to enhance students' reading comprehension.	4.56	.504	Strongly agree
8. Teacher's instructions encouraged students to read the text with their peers.	4.18	.673	Agree
9. Teacher's instructions simplified the reading text by asking straightforward questions.	4.32	.638	Strongly agree
10. Teacher's instructions of asking a series of questions promoted students' reading comprehension.	4.00	.696	Agree
11. Teacher's instructions guided students in writing the answers in English.	4.29	.719	Strongly agree
12. Teacher's instructions asked students to check their understanding of the reading content.	4.26	.567	Strongly agree

As shown in Table 3, the EFL students' perceptions of the teacher's instructional scaffolding were rated at 'strongly agree' for four items and at 'agree' for two items. The highest mean score was for item 7 ($M = 4.56$, $SD = .504$), indicating the EFL students strongly agreed that providing visual texts, photos, images, and pictures enhanced their reading comprehension. However, item 10 received a mean score lower than 4.21, indicating only low level agreement that the "teacher's instructions of asking a series of questions promoted students' reading comprehension" ($M = 4.00$, $SD = .696$).

Items 13 to 18 were used to measure the EFL students' perceptions of the teacher's instructional scaffolding during the post-reading activities. The results are revealed in Table 4:

Table 4. Students' perceptions of the instructional scaffolding during post-reading activities

Instructional scaffolding	Mean	Std. Deviation	Interpretation
13. Teacher provided good samples of answers from more successful readers.	4.32	.768	Strongly agree
14. Teacher asked more successful students to share their understanding of the texts.	4.38	.652	Strongly agree
15. Teacher corrected the grammar of students' written answers in the worksheet.	4.21	.729	Strongly agree
16. Teacher confirmed students' correct answers.	4.32	.589	Strongly agree
17. Teacher discussed unclear issues of the texts.	4.06	.886	Agree
18. Teacher summarised opinions and understanding at the final stage.	4.26	.618	Strongly agree

According to Table 4, most of the statements' mean scores were rated between 4.21 and 4.38 (strongly agree), with only one item rated at the 'agree' level (item 17). Item 14 achieved the highest mean score ($M = 4.38$, $SD = .652$) and reflected the EFL students' positive perceptions of the teacher's instructional scaffolding during the post-reading activities to seek clarification of answers from more successful students. However, Item 17 achieved the lowest mean score ($M = 4.06$, $SD = .886$) with the EFL students indicating less-positive perceptions of the teacher's strategy to discuss unclear issues of the texts.

4.2 Research question 2:

What are the EFL students' attitudes towards the use of visual texts to enhance reading comprehension?

The second research question aimed to investigate Thai EFL students' attitudes towards using non-digital multimodal texts represented together with visual texts, photos, images, and pictures. To gain insight into whether learners of different English proficiency levels had different attitudes, beginner, elementary, and intermediate level students were assessed (see Table 5, Table 6, and Table 7, respectively).

Table 5. The students' attitudes towards the use of multimodal texts to enhance reading comprehension

The use of multimodal texts to enhance reading comprehension	Beginner level students (A1/ n=24)		Interpretation
	M	SD	
1. Images and photographs related to the texts' title stimulated my interest and motivation to read the text.	4.13	.612	Agree
2. Images and photographs related to vocabulary activated my background knowledge of English words.	3.96	.550	Agree
3. Texts represented with images or photographs can help my understanding of the texts.	4.25	.676	Strongly agree
4. Learning English vocabulary by guessing from images can help me to more easily understand vocabulary meaning.	3.83	1.007	Agree
5. Learning to read texts with peers encourages me to be more active in group activities.	3.96	.690	Agree
6. Teacher guidance about the texts and use of relevant images can help me to understand the texts.	4.04	.751	Agree
7. Learning reading strategies from more successful peers supports me to participate in group activities.	4.21	.721	Strongly agree
8. Participating in group, peer, and individual reading activities and gaining clear guidance from the teacher can assist my reading comprehension.	4.00	.834	Agree
9. I feel joyful about participating in pair activities to answer questions in a limited time.	3.83	.702	Agree
10. After receiving help from the teacher and learning to read with my peers, I can answer the reading worksheet by myself.	4.17	.637	Agree

As can be seen from Table 5, the beginner level students (A1) 'strongly agreed' with item 3 that "texts represented with images or photographs can help my understanding of the texts" (M = 4.25, SD = .676), and with item 7 that "learning reading strategies from more successful peers support them to participate the group activities" (M = 4.21, SD = .721). However, item 4 that "learning English vocabulary by guessing from images can help me understand the vocabulary meaning easier" (M = 3.83, SD = 1.007) and item 9 "I feel joyful about participating in pair activities to answer questions in a limited time" (M = 3.83, SD = .702) achieved the lowest mean scores among the statements with the beginner-level students indicating 'agree' only.

Table 6. Students' attitudes towards the use of multimodal texts to enhance reading comprehension

The use of multimodal texts to enhance reading comprehension	Elementary level students (A2/ n=8)		Interpretation
	M	SD	
1. Visual texts, photos, images, and pictures related to the texts' title stimulated my interest and motivation to read the text.	4.00	.756	Agree
2. Visual texts, photos, images, and pictures activated my background knowledge of English words.	4.13	.835	Agree
3. Texts represented with visual texts, photos, images, and pictures can help my understanding of the texts.	4.13	.641	Agree
4. Learning English vocabulary by guessing from images can help me to more easily understand the vocabulary meaning.	3.88	.835	Agree
5. Learning to read with peers encourages me to be more active in group activities.	3.88	.641	Agree
6. Teacher guidance about the texts and the use of relevant visual representations can help me understand the texts.	4.00	.756	Agree
7. Learning reading strategies from more successful peers support me to participate in group activities.	3.88	.641	Agree
8. Participating in the group, pair, and individual reading activities and gaining clear guidance from the teacher can assist my reading comprehension.	3.88	.835	Agree
9. I feel joyful about participating in pair activities to answer questions in a limited time.	3.87	.835	Agree
10. After receiving help from the teacher and learning to read with my peers, I can answer the reading worksheet by myself.	4.00	.756	Agree

According to Table 6, the *elementary level students (A2)* achieved the highest mean scores for item 2, “visual texts, photos, images, and pictures activated my background knowledge of English words” ($M = 4.13$, $SD = .835$), and item 3, “texts represented with visual texts, photos, images, and pictures can help my understanding of the texts” ($M = 4.13$, $SD = .641$). Like the beginner level students, item 9, “I feel joyful about participating in pair activities to answer the questions in a limited time” achieved the lowest mean score ($M = 3.87$, $SD = .835$) among the elementary students.

Table 7. Students' attitudes towards the use of visual texts to enhance reading comprehension

The use of visual texts to enhance reading comprehension	Intermediate level students (B1/ n=2)		Interpretation
	M	SD	
1. Visual texts, photos, images, and pictures related to the texts' title stimulated my interest and motivation to read the text.	4.50	.707	Strongly agree
2. Visual texts, photos, images, and pictures related to vocabulary activated my background knowledge of English words.	4.00	1.414	Agree
3. Texts represented with visual texts, photos, images, and pictures can help my understanding of the texts.	3.50	.707	Agree
4. Learning English vocabulary by guessing from images can help me to more easily understand the vocabulary meaning.	4.50	7.07	Strongly agree
5. Reading English texts with peers encourages me to be more active in group activities.	4.00	.000	Agree
6. Teacher guidance about the texts and the use of relevant images can help me understand the texts.	4.50	.707	Strongly agree
7. Learning reading strategies from more successful peers support me to participate in group activities.	4.00	.000	Agree
8. Participating in the group, pair, and individual reading activities and gaining clear guidance from the teacher can assist my reading comprehension.	4.00	.000	Agree
9. I feel joyful about participating in pair activities to answer the questions in a limited time.	4.00	.000	Agree
10. After receiving help from the teacher and learning to read with my peers, I can answer the reading worksheet by myself.	4.00	.000	Agree

As shown in Table 7, the *intermediate level students (B2)* strongly agreed with the following items: (1) “visual texts, photos, images, and pictures related to the texts’ title stimulated my interest and motivation to read the text”, (4) “learning English vocabulary by guessing from images can help me understand the vocabulary meaning easier”, and (6) “teacher guidance about the texts and use of relevant images can help me to understand the texts”, achieving the same highest mean score for each ($M= 4.50$, $SD = .707$). However, the lowest mean score for these students ($M = 3.50$, $SD = .707$) was achieved by item 3, “texts represented with visual texts, photos, images, and pictures can help my understanding of the texts.

5. Discussion

5.1 Use of instructional scaffolding during the reading activities

The first research question of this study aimed to investigate EFL students’ perceptions of the use of instructional scaffolding strategies to promote L2 reading comprehension. The overall results clearly indicate that the students agreed that instructional scaffolding strategies could enhance their L2 reading comprehension. Regarding the *pre-reading activity*, the results showed the EFL students indicated positive perceptions of the teacher’s instructions to activate their prior knowledge of the given texts using multimodal texts to enhance their reading comprehension. This finding suggests that activating EFL students’ prior knowledge prior to reading long English texts can help them to become familiar with key concepts and make explicit links to previous lessons (Mahan, 2020, p. 7). This finding is

consistent with Yusuk (2018) who reported the links between the application of scaffolding techniques and a positive effect on student reading comprehension. According to Yusuk (2018), the scaffolding strategy “facilitates a student’s ability to build on prior knowledge and create new information” (p. 5). Consequently, they also promote their development and provide them the feeling that they already knew about the subject and that the new information is not beyond their comprehension (Aila, 2015; Safadi & Rebah, 2012). For this reason, Wakefield (2011, as cited in Kasch, 2018) has suggested that it is useful to provide learners with a range of options for comprehension scaffolding, such as activating and supplying background knowledge, while they are learning a foreign language. During the prereading activity, offering various ways to customize the display information as well as offering alternatives for visual information are viewed as a way to provide options for learners’ perception (Kasch, 2018, p. 35).

Regarding the *while-reading activity*, the results indicated the EFL students viewed the use of instructional scaffolding with graphic organisers and visual texts as a way to enhance their reading comprehension. This implies that using visual texts, photos, images, and pictures can help EFL learners to overcome difficulties in reading long English texts. This is because visual representations and graphic organisers “helped the students organize their thinking process and promoted their reading comprehension skills” (Aila, 2015, p. 92). In line with the findings from a previous study by Safadi and Rebah (2012), the researchers claimed that teaching materials to enhance student reading comprehension which use visual representations, graphic organisations, and diagrams “helped the students to organize their thinking process and utilize the supplement given” (p. 20). The results of this present study also tie nicely with the statement of Harraqui (2017, p. 87) that allowing students to work with manipulative pictures and other sources of information involves the construction of meaning. In other words, this contextualising approach can assist the teacher to bring complex ideas closer to the real-world experiences of students, helping them to learn language more comprehensibly, reduce cognitive demands, and enhance information recall.

Regarding the *post-reading activity*, the results revealed the EFL students strongly agreed that sharing understanding with more successful (i.e., more capable or language proficient) students can also help them to achieve reading comprehension. Allowing more successful EFL readers to share and reflect on how they understand the text and what types of reading techniques they use may help beginner EFL students to learn useful strategies for reading comprehension. Teaching techniques which draw on “learners’ awareness of their own knowledge and their ability to understand” may assist students and their peers to develop metacognitive responses (Safadi & Rebah, 2012, p. 7). Through the use of instructional scaffolding strategies, the teacher aimed to promote EFL students’ cooperation while engaging in English reading activities. Supporting EFL students to share their reading comprehension and problem-solving techniques during English reading activities can help to strengthen these skills “and together, students can reach better solutions than they could alone” (Belland, Kim, & Hannafin, 2013, p. 255).

5.2 Use of multimodal texts to enhance reading comprehension

The second research question of this study aimed to investigate the EFL students' attitudes towards learning to read with their peers and the use of multimodal texts, including visual texts, photos, images, and pictures to enhance reading comprehension. The results revealed that students with different English proficiency levels had different attitudes towards the use of multimodal texts for this outcome. The findings related to the beginner level students suggested that texts presented with visual texts, photos, images, and pictures, along with working with more successful peers, can enhance their reading comprehension. Reading multimodal texts can help beginner EFL readers to build vocabulary and develop reading comprehension during reading activities with their peers. Given the beginner EFL readers had limited English vocabulary, they required assistance in such forms as teacher scaffolding,

peer scaffolding, and multimodal scaffolding to assist them while reading English. As Aila (2015) has claimed, interactions with peers and groups can develop students' reading comprehension. In addition, Yawiloeng (2021) has asserted that "peer scaffolding plays a key role in enhancing reading comprehension in EFL contexts" (p. 52). Thus, learning to read English in a supportive learning environment provides beginner EFL students more opportunities to engage in various types of scaffolders and scaffolding strategies, consequently leading the students to learn to read by the self.

Conversely, the findings related to the elementary level students revealed that texts combined with visual texts, photos, images, and pictures can activate their prior knowledge of English vocabulary and enhance their reading comprehension. As Harraqui (2017) stated, bridging new knowledge with prior knowledge involves "an adequate connection of a novel piece of knowledge into the already existing mental structures" (p. 87). In the same way, Abdul-Majeed and Muhammad (2015) have claimed the bridging process activates the students' background knowledge and creates a personal link between the students and the reading comprehension topics. Therefore, Abraham and Farias (2017) have suggested "the top-down view that engages background and previous knowledge has to broaden to incorporate an evaluation of the culturally motivated affordances that the textual and visual modes bring to the construction of the text's architecture" (p. 63).

The findings related to the *intermediate level students* uncovered that they had positive attitudes towards the use of visual texts, photos, images, and pictures in texts to stimulate interest and motivation, and to enhance understanding of English vocabulary. As Ji and Luo (2019, p. 110) suggested, the use of multimodal teaching resources that include graphics, images, colours, animations, video, and so on can mobilise the students' senses, stimulate their learning interest, and enhance their memory and cognitive comprehension of relevant knowledge and skills. Regarding English vocabulary acquisition, the finding of this present study is in accordance with the multimedia principle for foreign language teaching and learning that "students learn better from words and pictures than from words alone" (Mayer, 2001, p. 184, as cited in Farias, Obilinovic & Orrego, 2007).

6. Conclusions and Implications

This study revealed how instructional scaffolding and multimodal texts enhance Thai EFL students' reading comprehension. The two main findings uncovered that the teacher's instructional scaffolding including the provision of visual representations of texts was positively received by the Thai EFL students. Students at the low English proficiency level indicated that teaching instructions which scaffolded them through visual texts facilitated their reading comprehension. The results reflected the EFL students' positive attitudes towards the use of visual texts with images or photographs to activate prior knowledge of the text, enhance reading comprehension, and stimulate interest and motivation during reading activities.

Regarding the pedagogical implications, multimodal L2 learning modes should be provided to EFL learners who experience difficulties reading and who have limited English vocabulary resources. The use of instructional scaffolding and multimodal text learning along with pairing students with higher language proficiency peers can assist struggling EFL readers to achieve reading comprehension more easily. That is to say, both low- and high-proficiency EFL readers should be provided with instructional scaffolding by the teacher, visual representations, and opportunities for peer scaffolding to develop their reading comprehension skills so that they may eventually read and comprehend English texts by themselves. Indeed, when teaching low proficiency EFL readers, teacher scaffolding and peer scaffolding should not be overlooked. Rather, these instructional scaffolding strategies should be integrated with multimodal texts to enhance EFL students' abilities to read the types of visual and audio

resources they usually engage within their daily lives. In this digital era, the use of multiple resources in classrooms is highly valued in multimodal instructional interventions so that young language learners can be exposed to language learning materials through the Internet outside the classroom. In EFL pedagogy, with the goal of developing multiliteracies in young language learners, visual literacy should be considered while selecting visuals and designing multimodal texts for content-based teaching (Savic, 2020). As Wang (2021) suggested, teachers should pay more attention to (i.e., reconsider and reconstruct) the relationship between student new literacy development and revitalizing traditional reading instructional practices employing multimodal resources.

7. Ethics Committee Approval

The author confirms that ethics approval was obtained from the University of Phayao, Thailand. The approval date and number are 2 April 2020 (2.2/012/64).

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