Using Lexical Cohesion Cloze Exercises to Improve EFL Learners' Reading Comprehension

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Abstract

The present research examined the effects of lexical cohesion cloze reading exercises (in which deletions involved various types of lexical cohesive devices) on improving EFL students' reading comprehension. Sixty-four Thai university students were randomly assigned to control and experimental groups. Both groups received 12 sessions of skill-based instruction, but the experimental group had additional practice in recognizing lexical relations through cloze passages. The mean pretest and posttest scores were compared using paired samples *t*-test. Post-treatment questionnaires were used to investigate students' attitudes towards the assigned extra reading exercises. Students in the experimental group achieved significantly higher mean posttest scores than the control group (p < 0.05). There were no significant difference in attitude mean scores between the control group and the experimental group (p > 0.05). The experimental group, however, were more positive towards the use of the extra reading exercises and found the technique to be useful in fostering their English reading comprehension. These findings indicated that lexical cohesion cloze reading is effective in improving the reading performance of Thai EFL students and should be used to equip EFL students with the knowledge they need for better reading comprehension.

Keywords: lexical cohesion, cloze reading, reading comprehension, EFL students

1. Introduction

Understanding a text requires the integration of separate elements and propositions into an overall conceptual unit (Cain & Oakhill, 2014; Oakhill & Cain, 2018). When reading, readers ought to interpret the words and expressions of a text in relation to one another within sentences and across sentences or paragraphs to derive meaning and not obtain meaning from isolated words or sentences. Notably, readers must focus their attention on the semantic relations between specific lexical items, known as lexical cohesion. Recent research indicates that the recognition of lexical relations between textual elements can help readers establish a coherent understanding of the text (Cain & Oakhill, 2014; Follmer & Sperling, 2018; Hall et al., 2015; Hoey, 1991). Therefore, greater emphasis should be placed on guiding students to recognize the semantic relationships between words and phrases and how such relationships can help students grasp the meaning of the reading texts while teaching of English reading.

Students learning English as a second or foreign language (ESL/EFL) usually find it difficult to identify lexically cohesive items since their lexical knowledge is often limited (Karakoc & Kose, 2017, cited in Al-Khasawneh, 2019). Furthermore, ESL/EFL learners who are less proficient in the language, are unaware that the various words in a text have related meanings. In other words, ESL/EFL learners do not instinctively understand the meaning of critical vocabulary items (Nuttall, 1996), nor how those words are linked to one another in a text they read. English teachers therefore should focus on increasing EFL readers' awareness of the writer's use of words with related meanings in a text and encourage them to learn how to identify lexically related words and phrases to enhance their comprehension.

This article presents an alternative reading exercise to reinforce and extend EFL learners' knowledge of lexical cohesive devices and semantic relationships that operate between and among sentences in a text.

2. Literature Review

The reading exercise in this study was designed based on lexical cohesion and its pivotal role in reading comprehension and the cloze procedure and its importance in reading instruction.

2.1 Lexical Cohesion

Lexical cohesion refers to the relationship that exists between vocabulary items. It occurs when two or more words in a text are somewhat related to the words preceding them in meaning, through either repetition of the same lexical item, or use of lexical items that are semantically related (Halliday & Hasan, 1976; Hoey, 1991). According to Hoey (1991), lexical cohesion is categorized into simple lexical repetition (e.g. *bird—birds*), complex lexical repetition (e.g. *fly—flying*), simple paraphrase (e.g. *to rise—to soar*), complex paraphrase (e.g. *success—fail*), superordinate, hyponymic (*birds—animals*), co-reference repetition (e.g. *Joe Biden—The President*),

membership of a closed (lexical) set (e.g. *Tuesday—Thursday*), personal pronouns (e.g. *bird—it*), deixis, i.e. demonstrative pronouns (*solar energy and wind power—these sources*), ellipsis (*the master's best work—the work*) and substitution (*birds—ones*). Hoey (1991) argues that lexical cohesion is not simply a matter of relationships between word pairs, but illustrates interrelationships between lexical elements and builds connections across sentence boundaries in a written text. In Hoey's (1991) model, lexical cohesive relations are referred to as "links." When sentences have an above-average number of links, they form a "bond." Interconnections between bonded sentences reflect a text's essential content (showing which ideas or topics are repeated) and are important to the thematic development of a text. Lexical relations, thus allow the reader to quickly access a text's content and determine what the text is about.

Hoey (1991) suggests that language learners should be taught to recognize important vocabulary and to identify multiple-linked cohesive items in a text to understand a text. Overlapping lexical items help readers make inferences about relationships between and among ideas which in turn facilitates the meaning-making process; a concept highly supported by several reading scholars. Schmitt (2000), for example, argues that lexical cohesion should be introduced in language teaching so that students can perceive vocabulary as related language elements in a text, as opposed to separate words. The recognition of associated vocabulary items confines readers to the theme of a text and focuses their attention on the text's content thereby activating a reader's background information that is relevant to the concepts being discussed by the writer (Ajideh, 2007; Schmitt, 2000).

Recent research demonstrates that knowledge of lexical relations positively affects language learners' comprehension of texts. Bayraktar (2011) investigated the role of lexical cohesion in Turkish EFL university students' reading comprehension and found that awareness of lexical cohesive links noticeably contributes to students' reading test scores and could help students become more proficient readers. Cain and Oakhill (2014) examined the role of two aspects of vocabulary knowledge in text comprehension: vocabulary breadth (the number of words an individual knows) and vocabulary depth (what an individual knows about those words and their semantic relationships). They found that the depth of vocabulary knowledge was highly linked to making global coherence inferences and reading comprehension ability. A reader's rich and well-connected semantic representations of words will allow rapid activation of word meanings and related concepts during reading comprehension, providing him or her with a basis on which to make thematic inferences (Cain & Oakhill, 2014; Oakhill & Cain, 2018).

Previous studies suggest that profound knowledge of vocabulary (i.e., awareness of word meanings in a text and the semantic links between them) is necessary to improve ESL/EFL reading comprehension. ESL/EFL learners should learn about different lexical cohesive devices and how to interpret the meaning of a group of words to develop deeper vocabulary comprehension (Mahlberg, 2006). For example, they should know that words or phrases can have the same or similar meanings; the word *noise* can be synonymous with *sound* whereas *build* has a similar meaning with *construct*. Some words that are repeated in a text can be lexically similar, but grammatically different; the word *harm* can be a noun and a verb, and *cold* can be an adjective and a noun. Morphological awareness, i.e., knowing that several words can be created from an existing word, is also important for reading comprehension (James, Currie, Tong, & Cain, 2021); it can help learners identify and predict the meaning of words (e.g., *know—knowledge—knowledgeable—known—unknown*). These related vocabulary items, in fact, reinforce one another's meanings and enable readers to understand words in association with other related words.

But introducing lexical cohesion alone may not be sufficient. ESL/EFL students should be given opportunities to apply the knowledge and skills they have learned. Currently available reading exercises or activities on lexical cohesion tend to direct students to find out words or phrases used in a text that certain vocabulary items refer to: a practice that may not suffice in ensuring that they understand the core concept of lexical cohesion and its actual use in texts. Neither does it prompt them to actively search for meaning in a text. ESL/EFL learners should practice identifying words with related meanings and defining connections between ideas in a more concrete way. The cloze procedure could help ESL/EFL readers habitually recognize lexical cohesive items and the relations among them.

2.2 Cloze Procedure

The cloze procedure is a reading activity in which selected words are deleted from a passage requiring readers to fill in the blanks with correct words to make the completed passage sensible (McGee, 1981). It has been utilized for several decades as an alternative technique to develop students' reading comprehension. Cloze reading tasks involve several processes: readers should read the entire text carefully to get a general understanding of the concepts introduced, think critically and analytically about the text, go back and forth between sentences or paragraphs to connect ideas, and use information from the text to determine which word should complete each blank space. Cloze reading activities encourage learners to interact and actively engage a text by utilizing different linguistic and reading skills such as background knowledge, context clues, guessing unfamiliar words, making predictions and making meaningful connections across different parts of a text (Chatel, 2001; Hartmann, 1992; Raymond, 1988). These practices, according to Kintsch (2012), are essential to acquire and construct meaning from written texts.

Research indicates that cloze reading involves both lower level comprehension skills (skills at the level of vocabulary and grammar structures) and higher level comprehension skills (skills in building inter-sentential relationships and making inferences; Brown, 2013; Yamashita, 2003). When performing cloze tasks, learners need to understand the meanings of words and sentence structure, and use other words in the same sentence or other sentences in the text as clues. Readers, in addition, are required to gather information and infer semantic relationships from different portions of text to complete a thought. This process directly involves readers in connecting words or phrases between or among sentences such as the use of a specific lexical item in one sentence and a hyponym in the next (e.g. *birds,*

pigeon, and *seagull*), or words that have similar meaning (e.g. *begin, start,* and *commence*). The use of information across sentence boundaries, in turn, assists readers in recognizing the interrelationships between words, establishing meaningful connections, and gaining a proper understanding of text (Blachowicz & Ogle, 2008; Meador, n.d.; Raymond, 1988).

Recent studies confirm the crucial role of the cloze procedure in reading comprehension. Farahani (2011) investigated the effect of using cloze procedure on adult Iranian students' reading comprehension. The participants in both the control and experimental groups were given a pre-test on reading comprehension before a treatment phase, and a post-test at the end of the treatment phase. The students in the experimental group who had practiced reading fixed-ratio deletion cloze passages for 13 sessions performed better in the post-test than those who had not. The study emphasized the pedagogical value of the cloze procedure and its effectiveness in developing EFL students' reading comprehension skills. Nikoopour and Bargnil (2020), likewise, investigated whether the use of scrambled cloze procedure would benefit intermediate Iranian EFL learners' reading and writing skills. One participant group, the treatment group, was given scrambled cloze tasks while practicing paragraph reading and writing over 14 sessions whereas another participant group, the control group, was engaged in the traditional learning approach. The experimental group outperformed the control group in both paragraph writing and reading comprehension, thus highlighting the importance of using cloze tasks to develop reading comprehension and writing potential in language classes.

Cloze reading passages are often constructed using different deletion strategies (Kleijn, 2018; Kleijn, Maat, & Sanders, 2019). Deletions can be based upon a "mechanical method" in which every n^{th} word is deleted from a passage. The rate of deletion varies from every fifth to every eighteenth word (Kleijn, 2018; Kleijn et al., 2019) depending on learners' age and their English proficiency levels. Since the deletion distance is fixed, gaps will occur at regular intervals throughout the whole text and any type and class of words have the same probability of being removed. This procedure, as Bachman (1985) explains, may remove a large number of words that are not essential for comprehension (e.g., articles and prepositions) since they are the most frequently used type in the English language. Similarly, it may result in the loss of words which are central to the meaning of a text. The gaps in the passage, moreover, can be too easy or too difficult. Therefore, many researchers find this technique impractical (e.g. Bachman 1985; Kleijn et al., 2019; Sadeghi, 2014) because the deletion procedure is not representative of the words that convey essential information about a text's meaning nor a valid measure of global comprehension ability. But another strategy, the "rational deletion" is done through careful selection of words to remove. Many researchers claim that it is a more flexible than the mechanical procedure because they can control the types of words to be deleted and choose certain elements that aptly illustrate different aspects of the learners' language competence (Kleijn, 2018; Kleijn et al., 2019; Sadeghi, 2014; Yamashita, 2003).

In a cloze exercise, items eligible for deletion could be function words (e.g. determiners, prepositions, or auxiliary verbs), content words (e.g. nouns, adjectives, adverbs, and main verbs), or words that show coherence (e.g. pronominal references, connectives). Bachman (1985) suggests that different types of cloze passages can be constructed to assess different types of knowledge or aspects of comprehension. For example, a cloze passage in which function words are removed can assess grammatical knowledge whereas a cloze task that contain conjunctions and conjunctive adverbs can test for textual knowledge (Kleijn et al., 2019). An earlier study conducted by Brown (1983), as cited in Kleijn, 2018, indicates that 56-70% of the cloze items are cohesive devices that show the relationships between ideas and propositions in the text (i.e. reference, conjunction, and lexical items). In some studies, only content words rather than determiners, prepositions or conjunctions are removed (Markham, 1987). Several researchers agree that cohesive devices and content words, which depend upon intersentential relationships, are suitable for cloze deletions since they enhance readers' ability to make associations across sentences (Baghaei & Ravand, 2016; McKamey, 2006). Nonetheless, to the best of the researcher's knowledge, no study so far has investigated the use of cloze passages, in which deletions directly involve using different types of lexical cohesion that requires information processing across sentences in text, to improve reading comprehension.

3. Research Questions and Hypotheses

In the present study, lexical cohesion cloze exercises were created based on the rational deletion cloze procedure and Hoey's (1991) classification of lexical cohesion. It was anticipated that using these reading tasks would help EFL students recognize lexically linked words and the semantic relationships between them and efficiently apply this skill to their reading to gain a deeper understanding of written texts. The research questions were as follows:

1. Do students who receive lexical cohesion cloze exercises achieve significantly higher scores in the posttest when compared to the pretest? Are these scores higher when compared to those in the control group?

2. What are the students' attitudes towards the use of extra reading exercises assigned to the experimental and control groups? Is there a significant difference between attitude mean scores of the experimental group and the control group?

4. Research Methods

4.1 Participants

Study participants included 64 undergraduates (Year 2-4) enrolled in a reading course at a university in Thailand who were randomly assigned to either a control or an experimental group. The students were blinded to the group to which they were assigned. These students were learners of B1 intermediate level of English proficiency as identified by the Common European Framework of Reference (CEFR). Participants, who were from various academic disciplines, shared similar characteristics such as age range (19-22), level of

education and gender. There were 36 participants in the control group and 28 in the experimental group. With fewer participants in the experimental condition (n < 30), determining the distribution of differences between the paired measurements was important. A Shapiro-Wilk test was, therefore, performed to confirm the normality of the data set. The results did not show evidence of non-normality (W = 0.96).

4.2 Learning Procedures

Both the control and experimental groups received instruction in reading skills (i.e., dictionary skills, guessing meaning from word structure, using context clues, skimming, and scanning, finding topics and main ideas, and making inferences) 3 hours each week for 14 weeks within the academic term. Both groups received identical treatment (e.g., content, reading load, and number of assignments) except practice in lexical cohesion.

The experimental group participants learnt about the different types of lexical cohesion and how to identify words with related meanings. They were informed that lexical relations served to form interrelationships between text elements and could be useful in extracting key topic-related words and important information from a text. They took part in 12 training sessions in an ordinary classroom setting. The practice sessions were scheduled 1 hour to the end of each class. In each session the students worked in groups of 3-4 on a lexical cohesion cloze reading exercise, which required them to fill in the blanks with appropriate words from the list (those lexically related items) and answer comprehension questions. They were encouraged to apply their knowledge about lexical cohesion to help them complete their tasks. Participants were also asked to take into consideration both the meanings of words and the parts of speech that belonged to sentences when completing the blank spaces.

The control group participants were given a reading passage followed by comprehension questions in each session. The instructor advised them to apply the knowledge and reading skills they had learned to their reading exercises. The control group participants worked in groups of 3 or 4 to complete their reading assignments akin to the experimental group participants.

4.3 Research Instruments

Two research instruments were used: the Reading Comprehension Test and a questionnaire on students' attitudes towards the extra reading exercises.

4.3.1 Reading Comprehension Test

The Reading Comprehension Test was administered as a pretest and a posttest to investigate the students' performance in reading comprehension. The tests consisted of 4 English informational texts of 250-300 words and 25 multiple choice comprehension questions. The passages were taken from different ESL/EFL reading resources and test items were reviewed and modified by the researcher. Three English reading instructors rated each test item based on relevance, clarity, and ambiguity, using the Item Objective Congruence (IOC) Index to assess for content validity (Rovinelli & Hambleton, 1977). The items with IOC indices less than 0.5 were revised before data collection. The test was further piloted on 42 students of the same educational background, English language proficiency, and other aspects with the research participants to assess for reliability and item difficulty. The test was highly reliable ($\alpha = 0.883$) and all test items were of moderate difficulty with values ranging from 0.3 to 0.8 (Chae, S. Park, & I. Park, 2019).

4.3.2 Questionnaire

The questionnaire to investigate students' attitudes towards the use of extra reading exercises in their classes was created in Google Forms. It was comprised of two main parts: a) closed-ended (using 4-point Likert scale ranging from 4—*strongly agree* to 1—*strongly disagree*); b) open-ended questions. The questionnaire statements were written in the respondents' first language to ensure comprehensibility and phrased both positively and negatively to minimize the acquiescence response bias (Chyung, Barkin, & Shamsy, 2018). Questions were then scrutinized by two English reading instructors for validity, using the IOC index. Part A of the revised questionnaire consisted of 12 opinion statements; Part B had 3 open-ended questions. Before data collection, the questionnaire had been pretested on a group of 38 students enrolled in the same course as the research participants who were not part of the experimental or control groups to assess the reliability of the instrument which was found to be optimal ($\alpha = 0.803$).

4.4 Reading Passages

The reading exercises used in the practice sessions consisted of 12 informational passages (250-300 words). All texts contained words that were repeated or lexically and semantically related. The researcher selected texts focusing on general subject matter that could be understood by learners of all disciplines. Each reading passage was followed by 5-8 comprehension questions. One reading exercise was prepared for each practice session. The same texts were provided to the control and the experimental groups.

For the treatment group, the reading texts (the same as those used in the control class) were scanned sentence by sentence by the researcher and another reading instructor for words that conveyed information and meaning and were also lexically and semantically related based on Hoey's (1991) taxonomy of lexical cohesion. Lexical cohesion cloze reading exercises were then created following the rational deletion procedure adopted from Kleijn et al. (2019). Beginning with the second sentence of each passage (the first sentence was left intact to give the participants some contextual support), certain items that were lexically associated with other words in the text were removed and replaced with blank spaces. Unpredictable words such as numbers, proper names, and technical terms were left in place. The participants were required to fill each blank space by choosing the most appropriate word from a list of given options.

4.5 Data Collection

4.5.1 Reading Comprehension Test: Product Data

The pretest was administered to all subjects prior to the intervention. Students were allowed 1 hour to complete the test. The posttest was given after completion of training (after 40 instructional hours as suggested by Sanders, 2019), following the same procedures as the pretest. The pretest and posttest aimed to compare the participant groups and determine the degree of change that occurred following the intervention.

4.5.2 Questionnaire: Perception Data

The online questionnaire was administered immediately after 12 training sessions. The students were asked to respond to each statement. For Part A, they were to choose an answer that best supported their opinion. For Part B, they were requested to write detailed answers (either in Thai or English) to express their true feelings and opinions.

4.6 Data Analyses

4.6.1 Reading Comprehension Test

Following the pretest, a two-sample *t*-test was used to compare the mean scores of the two groups. There were no significant differences between the two groups; $t(62) = 1.99$, $p = 0.27$ (two-tailed), suggesting that students in both groups had similar English proficiency levels.

Paired samples *t*-tests were conducted using Microsoft Excel 365 to compare increases in the mean scores on the post-test of students in the control group to those in the experimental group. The significance level for all tests was set at .05.

4.6.2 Closed-Ended Questionnaire

Data from the closed-ended questionnaire were summarized using descriptive statistics to illustrate the frequency, percentage, mean and standard deviation for each participant group. The overall mean score of each group was interpreted based on a 4-point Likert scale recommended by Phoong et al. (2021) i.e., mean scores of 3.01-4.00, 2.01-3.00 and 1.00-2.00 indicating a high, moderate and low level of satisfaction, respectively. In addition, a two-sample *t*-test was performed to determine whether there was a statistically significant difference in attitude mean scores between the two groups.

4.6.3 Open-Ended Questionnaire

Responses to the open-ended questions were qualitatively analyzed using the content analysis (Erlingson & Brysiewicz, 2017). Inter-coder reliability checks between two independent experts were done to ensure the accuracy of the categorization process (Mouter & Noordegraaf, 2012). Disagreements between the coders were resolved through discussion.

5. Results

5.1 Research Question 1-Changes in Test Scores by Study Group

The paired samples *t*-tests indicated that there was a significant difference ($p = .0045$) between the mean scores on the pre-test and the post-test of students in the experimental group. Thus, the null hypothesis was rejected. The results suggest that the use of lexical cohesion cloze reading could have improved the experimental group's posttest scores. The experimental group's mean post-test score was also higher than that of the control group. Conversely, the paired samples *t*-tests showed that the mean posttest score of the control group did not differ from their mean pretest score ($p > .05$). In fact, the control group's mean posttest score was even lower than their mean pretest score. Thus, the knowledge and skills taught, and practice exercises done by the control group did not seem improve their reading performance. Table 1 presents paired-samples *t*-test results.

Table 1. Paired-Samples T-Test Results

Groups	Measure	N	df	Mean	SD	t	Sig. (one-tailed)
Control group	Pre-test	36	35	15.30	3.58	.903	.1863
	Post-test	36		14.75	2.90		
Experimental group	Pre-test	28	27	14.10	5.04	-2.80	.0045
	Post-test	28		16.96	3.60		

5.2 Research Question 2- Students' Attitudes Towards the Use of Extra Reading Exercises

The questionnaire response rate was 73.43 %. The attitudes mean score of the experimental group was higher than that of the control group (see Table 2). Using Phoong et al.'s (2021) approach, the experimental group's mean value of 3.16 illustrates high level of satisfaction whereas the control condition's mean value of 2.93 indicates a moderate satisfaction. Although the experimental group supported the extra reading exercises more than the control group, the two-sample *t*-test results indicated that their attitude mean scores were not significantly different; $t(22) = -0.78$, $p = 0.22$ (one-tailed).

Students in the experimental group gave contradictory answers; for negatively worded questionnaire items, they had higher scores than

the control group. For example, they viewed lexical cohesion cloze exercises as making them more anxious (Item 5) and not helping them to improve their comprehension of English texts (Item 10). These answers, in fact, were inconsistent with their positive responses to Items 1 and 12. The students may have forgotten to reverse their scores and accidentally agreed with the negative statements when they intended to disagree with the negative statements. Answers to open-ended questions, however, may provide further insight into their perspectives.

Table 2. Closed-Ended Questionnaire Results

Items	Control group		Experimental group	
	Mean	SD	Mean	SD
1. The extra reading exercises can help you read more efficiently.	3.74	0.13	3.64	0.49
2. You think you will score higher on the post-test after doing all the extra reading exercises.	3.53	0.16	3.46	0.58
3. You will apply the reading skills you have practised to help you read English texts you may encounter in the future.	3.79	0.1	3.64	0.56
4. You enjoy doing the extra reading exercises.	3.47	0.12	3.61	0.57
5. The skills you have applied when doing the extra reading exercises make you feel more anxious.	2.42	0.22	2.71	1.05
6. You find the extra reading exercises useless and waste your time.	1.53	0.21	2.18	1.25
7. You find it hard to apply different skills while doing the extra reading exercises.	2.32	0.22	2.71	1.12
8. The skills you have practised when doing the extra reading exercises can help you understand English texts better.	3.58	0.12	3.61	0.5
9. This kind of extra reading exercises is useful for reading development.	3.79	0.1	3.68	0.48
10. The extra reading exercises do not help improve your comprehension of English texts.	1.84	0.29	2.46	1.35
11. The skills you have practised are not necessary.	1.74	0.24	2.61	1.13
12. The skills you have practised enable you to organize text information and grasp its main point more quickly.	3.37	0.17	3.64	0.62
Total mean	2.93	1.15	3.16	1.02

Part B of the questionnaire began with the question, *Do you think the extra reading exercises you have done in class can help you better understand English reading passages? In what way?* Many students in the experimental group indicated that being aware of related lexical items enabled them to see the connections between ideas and to notice the particular content that was emphasized by a writer faster, thus making it easier to comprehend the meaning of a text. Some students reported that they were more attentive and motivated when doing the extra reading exercises. As for the control participants, some stated that the extra exercises enabled them to deepen their learning by applying the skills they had learnt and that the reading tasks made them alert and consciously aware of the purpose of reading. However, other students in the control group had different views as they said that certain skills such as using context clues and guessing meaning from word structure could not always be applied to reading tasks. They also mentioned that such skills were not useful. One student, for instance, pointed out, *"I tried to determine the meaning of unfamiliar words by using context clues and word structure, but I couldn't. The more I tried, the more confused I got. In the end, I misinterpreted the texts."*

In reply to the second question, *What do you think of the classroom atmosphere while doing the extra reading exercises?* Students in both groups indicated they were satisfied with their classroom learning environment. The experimental group had remarkably positive points of view. They found the use of extra reading exercises effective in boosting reading comprehension and they enjoyed working in groups and exchanging opinions or ideas with their group members. The control group participants were also content with their learning experience. They asserted that they could read independently and that doing exercises was a great way to improve their reading skills and comprehension. Their responses were such as, *"It really motivated me. We had great fun together,*" *"I enjoyed doing the exercises. It created a friendly atmosphere,"* and *"It allowed us to think and work by ourselves and to practise reading skills."*

The final question was, *"Do you have any recommendations on how to improve the extra reading exercises?"* Although very few students in both groups responded to this question, three control participants wanted more reading exercises to further practice applying reading skills and strengthen their reading comprehension. One experimental group participant proposed adjusting the level of difficulty in reading texts for individual students, and designing lexical cohesion cloze reading for students with lower English language proficiency.

Overall, responses to open-ended questions corroborated the answers to the close-ended questions. All students in the experimental group provided favorable feedback on the extra reading exercises whereas the control group participants had more positive than negative comments. Both groups believed that the extra exercises were effective in improving their English reading abilities.

6. Discussion

There was an evident improvement in the mean score of the experimental group and a decrease in the mean score of the control group on the post-test after the training sessions. The students in the experimental class responded more favorably than the controls to the use of extra reading exercises although there was no significant difference in their attitude mean scores. The results confirm the beneficial effects of the lexical cohesion cloze exercises used in this study.

The experimental group's improvement in reading performance could have resulted from the combined use of the concept of lexical cohesion and the cloze reading technique; an association that could be attributed to two factors. First, the extra reading exercises helped raise the students' awareness of lexical cohesion and enabled them to familiarize themselves with lexically cohesive items used in reading passages. Their awareness of lexical relations helped them recognize related ideas in a text and how those connections were expressed through words that were semantically related. Thus, readers were able to relate various pieces of information and to integrate separate textual elements into an overall conceptual unit (Hoey, 1991). Readers, therefore, could grasp important information required to sufficiently understand a text. The present study concurs with previous research studies' findings that indicate that the recognition of cohesive relations among concepts across sentences can assist the readers in building a coherent understanding of the text (Cain & Oakhill, 2014; Follmer & Sperling, 2018; Hall et al., 2015): a claim also supported by Biler's (2018) and Bayraktar's (2011) who conclude that lexically related words positively impact reading comprehension and play a significant role in ESL/EFL students' reading process.

Second, the cloze reading procedure and the concept of lexical cohesion may have worked synergistically to improve reading skills. As cloze reading requires readers to fill in the missing words, readers need to understand how words relate to other words in a text and find semantic relationships between them to grasp the overall idea conveyed by a text. The use of the cloze procedure is an effective means of developing EFL students' awareness of lexical cohesion to this end. Moreover, making connections in the cloze procedure allowed readers to recognize the interrelationship between ideas in different parts of the text (Blachowicz & Ogle, 2008; Meador, n.d.; Raymond, 1988). The readers' awareness of lexical cohesive devices enabled them to find associations that existed between the meanings of words or phrases in the text, and to use those lexical relations to assist them in supplying the missing elements in the cloze exercises (Bridge & Winograd, 1982) and forming a coherent model of the overall meaning. The findings of the present study concur with previous research that illustrate how the cloze technique contributes to students' reading comprehension growth (e.g. Farahani, 2011; Nikoopour & Bargnil, 2020). In this study, the cloze technique may have helped students in the experimental group be more attentive and motivated while reading and focused on the content of the text being read. Cloze exercise reading tasks can help students acquire and apply knowledge of lexical cohesion.

Students' gains in reading comprehension may have partly resulted from their knowledge and use of reading skills acquired from the course. Reading skills are particularly important for ESL/EFL learners since they foster comprehension in reading to help them become successful readers (Pesce, n.d.; Mulatu & Regassa, 2022). In the present study, students in both classes were taught many reading skills and encouraged to apply them to different English reading texts to help increase their understanding. Most students in the control group found those skills very useful in understanding of informational texts. However, some had difficulty drawing on certain skills to help them tackle challenging reading texts. For instance, being equipped with vocabulary skills such as using context clues and word structure to determine meanings of words, could be useful in one context but not in another. Therefore, those students were uncertain whether the reading skills they had learnt really helped them in solving difficulties in reading comprehension.

Based on the results of this study, reading skills alone are not enough for reading comprehension. Previous research has shown that the knowledge of reading skills is necessary but not sufficient for good reading comprehension (Fisher & Frey, 2020). ESL/EFL learners also need instruction on language knowledge (e.g. vocabulary, sentence structures, text structures, cohesive devices; Duke, Pearson, Strachan, & Billman, 2011; Razi & Grenfell, 2012; Tarlani-Aliabadi, Tazik, & Azizi, 2022). ESL/EFL learners should be aware of lexical cohesive devices to trace semantic relations among text elements, make connections between ideas and combine related pieces of information together to construct meaning (Cain & Oakhill, 2014; Mahlberg, 2006; Rashid, Halim, Anuar, Ali, & Hussin, 2011). It is essential to give EFL students practice exercises to help them extend this aspect of linguistic knowledge.

7. Pedagogical Implications

As part of classroom practices, lexical cohesion cloze reading can be utilized as an alternative approach to support ESL/EFL learners acquire and apply skills in recognizing lexical cohesive items, and integrate connections between ideas in a concrete way, thereby increasing their level of text comprehension. Reading instructors should follow these procedures to create a lexical cohesion cloze exercise: 1) select a text of appropriate length and language difficulty for their students' reading level that contains an adequate number of related lexical items; 2) leave the first sentence intact to provide the reader with some context; 3) carefully select eligible items for deletion using the rational technique, especially words that carry semantic content and contribute to the meaning of the sentence in which they occur (content words) and words that are connected by semantic relationships such as simple repetition, complex repetition, simple paraphrase, superordinate, and hyponyms. The position of omission affects the difficulty of the cloze tasks; words in the middle, beginning and end of a sentence are easier, harder and moderate to predict, respectively (Chatel, 2001). The text length, language difficulty, semantically related words, the position of deletion, and the amount of information or context provided should be considered when preparing a lexical cohesion cloze passage.

Initially, transferring the knowledge of semantic relationships between words into practice might be challenging for ESL/EFL learners. Students should work in groups to give them confidence in completing lexical cohesion cloze tasks. Group work creates a safe and supportive learning environment (Alfares, 2017) in which students are comfortable, have more opportunities to express their own ideas and explain themselves to others, and can apply and reflect on what they have learned, thus enabling them to gain a deeper understanding of what has been taught. To begin with, students should be advised to read over the entire passage before supplying the missing words, and to reread the completed text to evaluate whether the words they selected fit within their respective sentences and the context in

which the words are used. While students are working on the tasks, the instructor may provide some guidance and assistance such as reminding them to note that the information in a text is usually organized and connected through lexical cohesive devices. Additionally, the instructor can encourage them to use words that are related in terms of meaning to navigate the reading materials and find the most suitable answer to complete a particular sentence that also fits the context of the whole passage.

8. Conclusion

This study assesses the effect of using lexical cohesion cloze exercises on EFL students' reading performance. The experimental group who received additional training in lexical cohesion cloze reading performed better than the control group who did not have such training on the posttest reading comprehension assessment. This suggests that lexical cohesion cloze reading plays a significant role in facilitating students' understanding of English texts. The students in the experimental group also favorably reviewed the extra reading exercises. They were constantly attentive during their reading classes and actively participated in the reading process. The study findings suggest that reading instructors should teach EFL students lexical cohesive devices, advise them to be aware of how lexically associated words operate in English texts, and develop reading exercises that reinforce this linguistic knowledge which helps provide a solid foundation for proficient reading comprehension.

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