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The Effect of Inquiry-Based Learning Strategy on EFL Tenth-Grade Students' Reading Comprehension

Hadeel Saleh Al-Khamaiseh*

Ministry of Education, Irbid, Jordan.

ARTICLE INFO

Article history

Received: 22 November 2023

Accepted: 20 December 2023

Published: 26 December 2023

Keywords:

EFL Jordanian students

inquiry-based learning strategy

reading comprehension

ABSTRACT

This study examined the potential effect of Inquiry-Based Learning Strategy (IBL) on the tenth-grade students' reading comprehension. Two groups and a quasi-experimental design were used. Two complete sections of grade 10 students from a public Secondary School for Girls in Irbid was randomly assigned by the researcher. The experimental group of 30 students was chosen first, and then the control group of 30 students. A pre-post reading comprehension test was designed before and after the study in order to fulfill its goals. Additionally, the experimental group was taught using the IBL strategy, whereas the control group was taught using the traditional teaching methods recommended in the tenth-grade Teacher's Book. According to the findings, there were significant statistical differences favoring the experimental group over the control group. In light of the findings, the researcher recommended employing the IBL strategy to students with various levels and EFL skills.

1. Introduction

The world has seen significant improvements in foreign language learning and teaching strategies, which have impacted reading comprehension skills. To keep up with these developments, it's critical to align teaching practices to meet the needs and interests of students and provide an engaging, and interactive learning environment.

Reading is a crucial skill when learning a foreign or second language (Bernhardt, 1983).^[18] Reading entails interaction between the text's substance and the reader's prior knowledge (Anderson, 1999).^[16] Reading is one of the four language skills that enhances students' capacity for simple interpersonal contact and communication (Cziko, Greenleaf, Hurwitz, & Schoenbach, 2000).^[20] According to Harmer (2007)^[29] and Rubin (1975),^[44]

reading is the process of understanding texts. It aids in students' academic and language development, expands their knowledge base, improving their vocabulary and spelling, imparting knowledge of fundamental concepts and facts, and enjoying the texts (Hamdan, 1991).^[26]

According to Goodman (1970, p. 5),^[24] reading is "a complex process by which a reader reconstructs, to some extent, a message encoded by a writer in graphic language." To extract the information needed and gain knowledge, students must comprehend the text's meaning (Grellet, 1981).^[25] According to Anderson (1999),^[16] reading is a process that incorporates the reader's interaction with the written text in order to understand the author's message.

Reading comprehension is the process of constructing

*Corresponding Author:

Hadeel Saleh Al-Khamaiseh, Doctor of TEFL, Ministry of Education, Irbid, Jordan; Email: Hadeel.khamaiseh27@gmail.com.

and understanding the meaning that is either explicitly or implicitly conveyed in written texts (Hodges, 1995).^[31] Students can use prior information when reading a text by using reading comprehension. Additionally, it aids in their understanding of the words, idioms, and symbols used in specific sentences or lengthy paragraphs (Oakhill, Cain, & Elbro, 2014).^[39] In order to grasp various sorts of texts in the future, it also helps students understand the definitions, substance, primary concepts, linguistic qualities, and generic structures of the text (Wahyono, 2019).^[47]

The three levels of reading comprehension are literal comprehension, inferential comprehension, and critical comprehension depending on the activation of the students' prior knowledge. Finding information in a text and comparing it to the overall meaning is known as literal comprehension. Students don't have to rely on prior knowledge as much as words in the text. On the other hand, inferential understanding necessitates students to draw on their existing knowledge to ascertain the information implied in a text. Students are at the critical comprehension level when they analyze the written content of the text, contrast the material in a reading text to what they already know, and assess the writer's point of view and objectives (Burns, Roe, Ross, & Elinor, 1999).^[19]

Reading comprehension skills enable students to easily and successfully understand the reading text (Mikulecky & Jeffries, 1996).^[37] A number of reading comprehension skills are skimming, scanning, reading critically, reading quickly, identifying topics, guessing the meaning of unknown words, spotting relationships, summarizing, drawing conclusions, and monitoring comprehension. These comprehension skills are crucial when instructing reading comprehension classes (Afflerbach, Pearson, & Paris, 2008).^[2]

Inquiry-based learning, also known as IBL, is a method of learning languages that places a strong emphasis on participation and conversation. It is becoming common to introduce language through inquiry, which makes it easier for students to learn a new language (Alameddine & Ahwal, 2016).^[3] It is preferable to use more engaging teaching strategies while teaching reading than traditional ones and the IBL strategy is said to be one of these innovative strategies (Harmer, 2001).^[28]

Both discovery-based learning and problem-solving are included in the IBL strategy. The following steps are part of the IBL teaching and learning strategy: By observing, making inferences, developing hypotheses, and exchanging ideas, students learn how to participate in processes of discovery and inquiry. In addition to textbooks, there are other sources of information of teacher strategies that research and inquiry based

(Richards, Platt, & Platt, 1992).^[43] IBL is frequently advantageous for students who have reading difficulties. Based on the experiences, interests, and needs of the students, the teacher and the students jointly identify problems and questions. A teacher actively engages in the teaching-learning process so that he/she is not just a source of information or knowledge (Raja'a, 2018).^[41]

The inquiry-based learning strategy consists of several key components. The components are as follows: Students participate in discussions about the material to be taught; problem-solving is crucial; learning is dynamic; and outcomes show how learning is applied. Continuous evaluation is linked with real learning. Active learners retain information more quickly than passive ones who merely listen to lectures. Instead of reading or hearing about something, students claim they remember it better when they are actively participating in it. It is the responsibility of the English language teacher to assist students in making connections between their prior knowledge and new material as well as between curriculum and investigation (Harada & Yoshina, 2004;^[27] Warner & Myers, 2009).^[48]

The General Guidelines and General and Specific Outcomes for the English Language place a strong emphasis on students' reading. It has been stated that using reading strategies is necessary for understanding literary and general knowledge texts. Along with literary works (such as magazine and newspaper articles, brochures, and poems); students must also explain a variety of basic, real-world facts. From the elementary to the secondary stages, the IBL strategy can be employed as a primary resource. English classes are obligatory for all Jordanian students. Regardless of whether they are in elementary or secondary school, students typically spend four to five hours each week studying English (Ministry of Education, 2006).^[38]

Reading is difficult for many EFL students in Jordan. It is a challenge for students (Amoush, 2012).^[15] In some classrooms, reading comprehension skills are taught in the same way that some teachers instruct silent reading without encouraging their students to come up with original ideas (Kailani, 1998;^[34] Al-Odwan, 2012).^[11] Numerous studies have shown that many Jordanian EFL students struggle with reading (Al-Makhzoumi, 1986;^[10] Al-Ansi, 1992;^[4] Al-Saraireh & Abu-Haija, 2007;^[13] Al-Jamal, Al-Hawamleh & Al-Jamal, 2013;^[7] Al-Janaydeh, 2022).^[8] Their conclusions showed that insufficient reading comprehension learning had a detrimental effect on student's reading skills.

2.Statement of the Problem

According to the researcher's teaching experience,

EFL students in Jordanian schools occasionally struggle to comprehend reading texts and consequently struggle to respond to reading comprehension questions. Reading comprehension among students is still low and falls short of expectations despite the significance of reading comprehension (Amoush, 2012).^[15] The student's reading comprehension is also insufficient, according to numerous Jordanian researchers (e.g., Fraihat, 2018;^[23] Huwari, 2019;^[32] Migdadi & Baniabdelrahman, 2016;^[36] Radaideh, Al-Jamal, & Sa'di, 2020).^[40]

Many Jordanian students have trouble comprehending English-language materials (Alkhaldeh, 2011;^[9] Fraihat, 2003;^[22] Jarrah, 2008).^[33] Unfortunately, they are unable to extract the text's primary and supplementary ideas (Hassan, 2019).^[30] Additionally, they are unable to broaden their knowledge or comprehend language (Al-Rimawi & Al Masri, 2022).^[12] Furthermore, according to Al-Awamleh, Bajes, Majali, and Inshasi (2021),^[5] teachers are reluctant to use innovative strategies or procedures that are unrelated to their traditional strategies. As a result, the present study may benefit the development of Jordanian EFL teachers and aid in the reading comprehension growth of EFL students in the tenth grade.

Purpose of the Study

This study aims to investigate the effect of the inquiry-based learning strategy (IBL) on the reading comprehension of EFL female 10th-grade students in Jordan.

Question of the Study

This study seeks to answer the following research question:

Is there a statistically significant difference at ($\alpha = 0.05$) on the reading comprehension post-test scores of Jordanian EFL tenth-grade students that may be attributed to IBL instructional strategy (IBL strategy vs. traditional instruction)?

Significance of the Study

This study is significant for teachers because it may aid them in developing their reading comprehension lessons, becoming more adept at deriving meaning from texts, and discovering ways of aiding students to understand what they read. The IBL strategy can be applied to a variety of texts, including academic articles, news items, short stories, and even novels. The results of this study could assist foreign language teachers in implementing an innovative strategy for teaching reading comprehension. The study is crucial because it can help with the planning

and production of necessary assignments and activities that enhance students' reading comprehension, which can help with the development and teaching of the reading curriculum. This study will be helpful to EFL researchers because they can use it as a base-line reference for their research. The results of this study can also aid in the development of more efficient instructional strategies that can be used in a variety of educational contexts. It may also open the door to more investigation into the effects of various strategies for reading comprehension on students' academic achievement and overall learning outcomes.

Operational Definitions of Terms

In the current study, the following terms are defined as follows:

The Inquiry-Based Learning (IBL) Strategy combines students' inherent curiosity with an effective strategy to help them become more proficient readers of English. In this study, the researcher redesigned the reading texts' content to conform to the IBL strategy and created a related instructional program. The texts were taken from the Action Pack 10 textbook.

Reading Comprehension is the process of understanding meaning by coordinating a number of intricate processes, including interaction between the reader and the reading text, a link to prior knowledge, a thorough comprehension of the text, word and world knowledge, and fluency (Hodges, 1995).^[30]

The ability of female students in the tenth grade to understand what is textually explicit (literal comprehension), what is textually implicit (inferential comprehension), and to evaluate the writer's ideas (critical comprehension) is what meant by reading comprehension in the current study. A reading comprehension test that covers these levels of comprehension was used to measure to measure reading comprehension.

Literal Comprehension is an awareness of the reading text's immediate meaning, including relevant dates, facts, and locations (Burns, Roe, Ross, & Elinor, 1999).^[19] The ability of students in the tenth grade to skim the text for the main idea, scan the text for the specific information, and summarize the text was examined in the current study.

Inferential Comprehension is the process of interpreting an author's implicit meaning, anticipating their intended message, and making inferences (Burns et al., 1999).^[19] In the present study, students in the tenth grade were tested on their capacity to identify predicted results and conclusions, analyze critical information, and extrapolate suggested meaning from context.

Critical Comprehension is the act of making judgements of a text's elements and the skill, objective, and writing

style of the author (Burns et al., 1999).^[19] The current study looked at students' judgmental skills, their capacity to compare their predictions to textual material and have discussions using terms for agreement and disagreement.

Limitations of the Study

The results of the current investigation are constrained by the following limitations:

1. During the second semester of the academic year 2022–2023, the study focused on 60 female students in the tenth grade at one public school, from Irbid Directorates of Education. If additional schools and grades had been the focus, the findings might have been more broadly applicable.

2. The treatment lasted just for eight weeks. A longer period might have produced different results.

3. Since Action Pack 10 (specifically modules 4, 5, and 6) is the textbook utilized in Jordanian public schools for this study, various textbooks with different material may produce different findings.

Review of the Related Literature

The researcher gathered the following studies after evaluating educational research that were pertinent and useful to the investigation of the IBL strategy.

Abu-El-Samen (2008)^[1] examined the effect of inquiry and conventional learning styles on reading comprehension. The participants were 90 students from King Abdulaziz University in Jeddah, Saudi Arabia. The sample was divided into three groups. Data were gathered using 100 reading comprehension tests that included multiple-choice and essay questions. The results demonstrated that students who were taught cooperative and inquiry-based reading comprehension approaches outperformed those who were taught conventionally.

Trimastuti (2012)^[46] looked into how well 72 Turkish students in the tenth grade were taught to read using the IBL strategy (specifically, the 5Es Model). A pre-posttest, as well as a questionnaire, were employed by the researcher to gather data. The results demonstrated that the 5E model was superior to the traditional approach in terms of teaching reading.

Sari (2017)^[45] hypothesized that inquiry-based learning may enhance the reading abilities of 231 EFL students. Both the experimental and control groups were tested using a t-test. The findings demonstrated that students' reading abilities had improved, with a clear separation between those who had received IBL training and those who had not.

Ermawati (2018)^[21] looked on how IBL instruction

helped EFL students improve their reading comprehension. A mixed methods strategy that includes both quantitative and qualitative techniques was used to collect the study's data through questionnaires and interviews. It was offered to third-semester students at STKIP Muhammadiyah Sidrap. The results showed that the important findings were the result of the IBL strategy.

Raja'a (2018)^[41] looked into the effects of the IBL strategy on the reading comprehension and self-control growth of 86 female students in Gaza. A self-regulation scale, a pre-post reading skills test, and a list of reading comprehension skills were used as data gathering instruments. The IBL strategy had a considerable impact on the students' reading comprehension and self-control, according to the findings.

Ramasari (2020)^[42] investigated the effectiveness of teaching tenth grade students reading comprehension using the IBL strategy. 20 students participated in the study. To collect data, a pre-posttest was used. The study's conclusions showed how crucial it is to teach tenth grade students reading utilizing an IBL strategy.

Ali and Ulker (2020)^[6] investigated the impact of an IBL strategy on the growth of reading and writing skills in university-bound EFL students. 52 students from educational faculties took part in the study. To gather data, a pre-posttest was used. The findings demonstrated a considerable improvement in both readers' and writers' skills due to the IBL strategy.

Aslan (2021)^[17] looked at the IBL activities for increasing student learning outcomes in fundamental reading skills exercises in Madrasah Ibtidayah and primary schools in Indonesia. Data was gathered by the researcher from a number of educational situations that successfully linked their IBL. The researcher employed a descriptive-qualitative design to assess a set of data. IBL is highly significant and ought to be used in the learning environment, according to the findings.

Alshammari (2022)^[14] looked into how the IBL strategy affected the metacognitive reading comprehension abilities of Saudi students. 106 males and females from Shaqra University in Saudi Arabia participated in the study. With one group, the researcher used a quasi-experimental design. Data were gathered using a reading comprehension test as a pre-test and post-test. The results demonstrated that using an IBL strategy helped students develop their meta-cognitive reading comprehension abilities.

Concluding Remarks

Many studies (e.g., Abu-El-Samen (2008),^[1] Trimastuti (2012),^[46] Sari (2017),^[45] Ermawati (2018),^[21] Raja'a

(2018),^[41] Ramasari (2020),^[42] Ali & Ulker (2020),^[6] Aslan (2021),^[17] Alshammari (2022))^[14] demonstrated the benefits and effectiveness of an IBL strategy. It was also disclosed that just a few research studies had been carried out to examine the impact of an IBL strategy on college and high school students' reading comprehension. Prior studies, however, showed that an IBL strategy significantly improved the reading comprehension of EFL students as a whole. Numerous research was undertaken to determine how an IBL strategy affected EFL learners. There hasn't been much research on Arab English learners, though. Studies on the impact of an IBL strategy on Jordanian students' reading comprehension have not been conducted locally.

3. Method and Procedures

Design and Variables of the Study

The quasi-experimental design was used in the current study. The IBL strategy served as treatment on the independent variable of reading comprehension scores. The results of the students' post-test scores on reading comprehension served as the dependent variable.

Participants of the Study

Two EFL tenth-grade sections with 60 female students each made up the participants of the current study. These sections were purposefully chosen because the researcher has a close relationship with the English teacher there. They attended the public Soum Secondary School for Girls. The school year 2022–2023's second semester was used to conduct the current study.

The experimental group consisted of 30 students, while the control group also included 30 students. A pre-test was given to the students in the two groups to assure equality. The Action Pack 10 textbook's reading activities were taught to the experimental group utilizing the IBL strategy. The lesson plan for the control group was taken from the Teacher's Book of Action Pack 10, although the IBL strategy was not mentioned in it.

Research Instrument

The reading comprehension pre-posttest was designed to fulfill the study's objectives. The instrument is described as follows:

The Pre-Post Test for Reading Comprehension

The researcher designed a pre-post test for reading comprehension based on an analysis of related prior literature. The pre-posttest concentrated on the three basic reading

comprehension levels (literal, inferential, and critical). Each of these levels was evaluated using a distinct set of questions that the researcher designed in accordance with the reading material and the tenth-grade modules used in Jordanian public schools. The learning and teaching resources available in the teacher's book were used to design the reading comprehension test. Before and after using the IBL strategy in the experimental and control groups, the test was designed to determine how well each student understood what they had read, both individually and collectively, in order to demonstrate the effectiveness of this instructional strategy.

For the reading comprehension pre-posttest, the researcher designed multiple-choice questions to measure the students' reading comprehension at three levels (literal, inferential, and critical). Twelve questions were asked in all. Each of these questions was assigned to one of three levels. Six questions made up the first level, which evaluated literal level, and they made up 30% of all questions. The second level, which made up a total of four questions and comprised 40% of the total, examined the inferential level. Two questions made up the third level, which evaluated the critical level, and they together constituted 30% of the total questions.

Test Validity and Reliability

The test was piloted with a sample of 20 students in order to assess the test's construct validity and internal consistency. Then, the corrected item total correlation between the skill score and the total score of its level as well as the Pearson Correlation Coefficient between the skill score and the total score of the test were retrieved. According to the findings, the ranges of the Pearson Correlation Coefficients for literal, inferential, and critical data are (0.761-0.881), (.676-.785), and (.567-.654), respectively. Pearson Correlation Between.543 and.678 is the correlation coefficient between the skill score and the test's overall score. Additionally, the corrected item total correlation for literal, inferential, and critical items varied from (0.555–0.623), (.534–.564), and (.412–.567), respectively. The test is valid since the internal consistency coefficients are higher than the threshold value (0.40) (Leach, Barrett, & Morgan, 2011).^[35]

Additionally, the test's Cronbach's alpha and test-retest coefficients were extracted. The results showed that the test's Cronbach's alpha coefficients are .78, .86, .79, and .85 for literal, inferential, critical, and the entire test, respectively, while the test-retest coefficients are .79, .82, .72, and .80 for literal, inferential, critical, and the entire test. The test is reliable since the reliability coefficients are higher than the threshold value (0.70).

IBL Strategy-Based Instructional Program

In order to achieve the goals of the study, the researcher designed an IBL strategy-based instructional program to help participants improve their reading comprehension. The researcher additionally redesigned the reading comprehension exercises in modules 4, 5, and 6 so that participants in the experimental group used IBL strategy during their reading comprehension sessions.

The Instructional Material

The instructional materials used in this study were based on Modules 4, 5, and 6 of Action Pack 10’s Student’s Book and Activity Book. The researcher redesigned these exercises for the participants in the experimental group based on the IBL strategy that was used to instruct reading comprehension skills.

Duration and Content of the Instructional Program

The duration of this program was eight weeks. The modules (4, 5 and 6) in Action Pack 10’s reading comprehension exercises have been redesigned in light of the IBL strategy. Each unit’s reading comprehension exercises were divided into two sessions of 45 minutes each, held twice a week for eight weeks.

Procedures for Designing and Implementing the Instructional Program

To implement the program, the following procedures were taken:

1. Locating reading tasks in Action Pack 10’s targeted modules.
2. Determining the tasks that the IBL strategy had incorporated.
- 3 Putting the IBL strategy into practice for these tasks.
4. Providing the steps that were taken throughout the lesson.
5. Appropriate time allocation was made for each task.
6. The targeted IBL strategy was implemented following the administration of the reading pre-test to the control and experimental groups.
7. Giving examples of the targeted IBL strategy while introducing it to the experimental group.
8. Making use of the intended IBL strategy as a model for students to follow.
9. Reviewing the IBL strategy before each reading activity.
10. The student’s comprehension skills in reading were assessed after the curriculum was implemented to determine their reading comprehension improvement.

Validity of the Instructional Program

The researcher presented the instructional program to a jury of English curriculum and instruction experts to guarantee its validity. The jury was requested to assess the program and provide the researcher with any feedback or comments regarding the program that was distributed. One of these comments was to present a hands-on lesson on the IBL strategy for teaching reading comprehension skills. The researcher made the changes as suggested by the experts.

4. Results

To answer the research question, the researcher followed the following procedures: The means and standard deviations of pre- and post-test scores in overall reading comprehension test for the two groups were calculated, as shown in Table 1.

Table 1: Pre-performance and Post-performance of the Two Groups in Overall Reading Comprehension

Reading Comprehension Level	Group	Pre-test		Post-test	
		Mean	S.D	Mean	S.D
Overall	Experimental	10.43	1.43	16.00	1.72
	Control	8.43	1.63	11.43	2.19
	Total	9.43	1.83	13.72	3.02

Table 1 shows that there is observed differences between post-performance of the two groups in overall reading comprehension. The mean scores of the experimental group (Mean=16) is higher than the mean scores of the control group (Mean=11.433) in the overall reading comprehension as measured by reading comprehension test.

To investigate the statistically significant effect of the instructional strategy (i.e., Inquiry-Based Learning Strategy vs. Traditional) on the overall reading comprehension after controlling the effect of overall reading comprehension pre-performance, a one-way Analysis of Covariance (ANCOVA) was used, as shown in Table 2.

Table 2 shows statistically significant differences in the students’ overall reading comprehension between the experimental and control groups in favor of the experimental group. The partial eta squared value of 0.510 indicates that the instructional strategy explained 51.0% of the variance in overall reading comprehension.

Furthermore, adjusted and unadjusted means of the overall reading comprehension of the two groups were extracted. Table 3 illustrates the means, standards errors, and standard deviations of the two groups (post-performance) in the overall reading comprehension before and after controlling the overall reading comprehension pre-test scores (pre-performance).

Table 2: The Effect of Instructional Strategy on the Overall Reading Comprehension after Controlling the Effect-performance Scores

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pre-test	.990	1	.990	.251	.618	.004
Group	233.918	1	233.918	59.424	.000	.510
Error	224.377	57	3.936			
Corrected Total	538.183	59				

Table 3: Adjusted and Unadjusted Means of the Overall Reading Comprehension

Group	Unadjusted Mean		Adjusted Mean	
	Mean	S.D.	Mean	Std. Error
Control	16.00	1.72	16.09	.400
Experimental	11.43	2.19	11.35	.400

As shown in Table 3, there are observed difference between the two groups in the overall reading comprehension post-performance after the differences in the overall reading comprehension pre-test scores were controlled. As such, IBL strategy enhanced post-performance in the overall reading comprehension.

Also, pre-performance and post-performance of the two reading comprehension levels (literal, inferential, and critical) were calculated, as shown in Table 4.

Table 4: Pre-performance and Post-performance of the Two Reading Comprehension Levels (Literal, Inferential, and Critical)

Reading Comprehension Level	Group	Pre-test		Post-test	
		Mean	S.D	Mean	S.D
literal	Experimental	3.70	.84	4.90	.71
	Control	2.77	.77	3.97	.85
	Total	3.23	.93	4.43	.91
Inferential	Experimental	3.30	.53	5.87	1.04
	Control	2.90	.76	3.90	.84
	Total	3.10	.68	4.88	1.37
Critical	Experimental	3.43	.57	5.23	.82
	Control	2.77	.77	3.57	.90
	Total	3.10	.75	4.40	1.2

Table 4 shows that there are observed differences between the post-performance scores of the two groups' post-test performance in the three levels of reading comprehension. The post-performance scores of the experimental group are higher than the mean scores of the control group in the reading comprehension levels as measured by the reading comprehension test.

To evaluate the effect of the instructional strategy (i.e., IBL strategy and conventional method) on the linear combination of the reading comprehension levels after controlling the effects of pre-test scores, a one-

way Multivariate Analysis of Covariance (One-way MANCOVA) using multivariate test (Hotelling's Trace) was conducted. Table 5 illustrates the results.

Table 5: The Effect of Instructional Strategy on the Reading Comprehension Levels

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Teaching Strategy	1.052	18.581	3.000	53.000	.000	.513

Table 5 shows that the main effect of the instructional strategy was significant. This indicates that the linear composite of the reading comprehension differs across the two groups. The partial eta square value of .513 indicates that 51.3% of the variance in the composite of the reading comprehension levels could be attributed to the instructional strategy. Since the effect of the instructional strategy on the combination of the reading comprehension levels is significant, follow-up univariate analysis (Tests of between-subject effects) was performed, as shown in Table 6.

Table 6 shows that there were statistically significant differences between the two groups in the three levels of reading comprehension in favor of experimental group. The partial eta squared values of inferential, literal, and critical were .264, .419, and .415, respectively. This means that the instructional strategy explained 26.4%, 41.9%, and 41.5 % of the variance in (inferential, literal, and critical) levels, respectively.

Additionally, adjusted and unadjusted means of the three levels of reading comprehension for the experimental and control groups were extracted. Table 7 illustrates the means, standards errors, and standard deviations of the two groups in the three levels of reading comprehension before and after controlling the pre-test scores of reading comprehension levels.

Table 7 shows that there are differences between the two groups on the three levels (i.e., inferential, literal, and critical) remaining after the differences in the pre-test scores are controlled. As such, IBL strategy improved students' performance on inferential, literal, and critical. Based on this, the highest effect size of IBL strategy was on critical, followed by inferential, and literal.

Table 6: The Effect of the Instructional Strategy on the Reading Comprehension Levels after Controlling the Effect of Pre-Test Scores

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pre-Literal	Literal	.164	1	.164	.261	.612	.005
	Inferential	1.005	1	1.005	1.084	.302	.019
	Critical	.623	1	.623	.816	.370	.015
Pre-Inferential	Literal	.334	1	.334	.532	.469	.010
	Inferential	.045	1	.045	.049	.826	.001
	Critical	.007	1	.007	.010	.922	.000
Pre- Critical	Literal	.160	1	.160	.255	.616	.005
	Inferential	.318	1	.318	.342	.561	.006
	Critical	.289	1	.289	.379	.541	.007
Teaching Strategy	Literal	12.384	1	12.384	19.725	.000	.264
	Inferential	36.850	1	36.850	39.735	.000	.419
	Critical	29.732	1	29.732	38.962	.000	.415
Error	Literal	34.531	55	.628			
	Inferential	51.006	55	.927			
	Critical	41.971	55	.763			
Corrected Total	Literal	48.733	59				
	Inferential	110.183	59				
	Critical	84.400	59				

Table7: Adjusted and Unadjusted Means of the Reading Comprehension Levels

Dependent Variable	Group	Unadjusted mean		Adjusted mean	
		Mean	S.D	Mean	S.E
literal	Experimental	4.90	.71	4.99	.161
	Control	3.97	.85	3.88	.161
Inferential	Experimental	5.87	1.04	5.84	.196
	Control	3.90	.84	3.93	.196
Critical	Experimental	5.23	.82	5.26	.177
	Control	3.57	.90	3.55	.177

5. Discussion

The research question aimed to determine whether there were any statistically significant differences between the IBL strategy and traditional strategy in the tenth-grade Jordanian EFL students' overall and (literal, inferential, and critical) reading comprehension levels from the post-

test scores that could be attributed to the instructional strategy. The study's findings indicate that using the IBL strategy did significantly affects reading comprehension scores at all three levels (literal, inferential, and critical). As a result, on the reading comprehension post-test, the experimental group's students significantly outperformed the control group's students in terms of both overall performance and performance on the literal, inferential, and critical comprehension levels. The results also show that the students' level of reading comprehension increased as a result of using the IBL strategy.

For a number of potential reasons, the IBL strategy improved the experimental group of students' post-test reading comprehension. One of the potential deciding elements is how an educational program is designed since IBL needs the teacher to carefully plan and approve an order to achieve learning objectives. Topics were chosen from the students' curriculum, the reading assignments were carefully crafted by the researchers, brief and well-structured to produce better conversation topics, and the

time allotted was appropriate.

The cooperative setting is another factor that might have improved the students' reading comprehension. IBL strategy increased students' collaboration to complete tasks by concentrating on individual characteristics. This led to the program's creation of exercises appropriate for both individual and group work, which were intended to encourage students to engage more deeply with the texts they read. The interactive nature of the IBL strategy encouraged student participation in the learning process rather of relying solely on teacher instruction.

Through this strategy, the teacher was able to provide each student specific feedback that helped them improve their comprehension of the subject matter and their reading skills. Students also felt more motivated and involved. A major factor in the high interest level of this English language study strategy among students is the teacher's role as a mentor, educator, and encourager, especially in the context of reading comprehension sessions.

The IBL strategy-based instructional program increased the students' reading comprehension abilities in two different ways. It first enhanced students reading abilities by incorporating specific reading comprehension techniques within different IBL phases. After that, it gave them the ability to engage with increasingly complex texts and locate textual support for their theories. It was expected of the students to explain what they had been given, especially at the processing stage. As a result, when students tried to reply to the questions, they supported their answers with passages from the text.

6. Conclusion

The study's goal was to determine how the IBL strategy affected the reading comprehension of female EFL students in Jordan's tenth grade. Throughout the academic year 2022–2023, an instructional program was designed and put into place with the goal of achieving this. The results of the research led to the following conclusions:

- The teaching strategy improved reading comprehension while simultaneously enhancing student participation and classroom activities.
- Students were able to comprehend what they were reading more clearly at the literal, inferential, and critical levels thanks to the IBL strategy-based instructional program.
- Following the implementation of the IBL strategy-based instructional program, students' engagement increased. Sharing of thoughts and solutions by the students was encouraged. They discussed the text using the IBL strategy.
- After the implementation of the IBL strategy-based

instructional program, students were more attentive in class. IBL was used throughout both pair and group works. This strategy allowed the students to interact with one another.

Pedagogical Implications

Based on the findings, the following pedagogical implications are presented:

- The IBL strategy, which enables students to draw on their existing knowledge and experiences to connect with the text, should be emphasized for EFL students. In order to develop a strong understanding of the entire text, it also helps them skim for key ideas, scan the text for specific information, summarize the material, and draw inferences.
- Reading comprehension can be performed on three different levels: literal, inferential, and critical. EFL teachers should emphasize the value of reading comprehension. The first level's (inferential) objective is to prepare students to comprehend and identify the key details of the material provided in the text as well as to determine the author's main ideas. Second-level (literal) students can comprehend what the text is saying. At the third level (critical), students are able to confirm, discuss, and assess.
- EFL teachers should think about teaching reading comprehension levels to simplify the teaching and learning process. The study's ending pedagogical implication calls for the inclusion of explicit IBL strategy in EFL school textbooks as well as the inclusion of reading activities like filling in blanks, summarizing texts, determining the author's intended audience, drawing conclusions, and answering multiple-choice and true-false questions.

Recommendations

The following recommendations are provided for EFL teachers, EFL supervisors, EFL textbook designers, Ministry of Education, and researchers based on the findings of the current study.

Recommendations for EFL Teachers

It is recommended that EFL teachers should: Utilize the IBL strategy, which is one of the best strategies for helping students understand the reading material and participate in the teaching-learning process.

Recommendations for EFL Supervisors

It is recommended that EFL supervisors should: Increase their understanding of the value of adopting the

IBL strategy into reading activities and its potential in the classroom. The use of such a strategy may enhance the students' participation, understanding of the subject matter, and engagement.

Recommendations for the EFL Textbook Designers

It is recommended that EFL textbook designers should:

- IBL strategy should be given more consideration, and a range of teaching and learning activities should be presented.
- IBL strategy should be clearly incorporated into the student's textbooks and the teacher's book by way of the presentation of a variety of teaching and learning activities with a reading comprehension focus.

Recommendations for the Ministry of Education

It is recommended that the Ministry of Education should:

- Consider the advantages of employing the IBL strategy to teach reading comprehension, and train EFL teachers on how to utilize it in their instruction so that they can put it into practice and break the mold of traditional methods of teaching.
- Provide training programs to equip EFL teachers with reading comprehension instruction strategies that get around textbook limitations and consider the requirements and interests of their students.

Recommendations for Future Research

It is recommended that researchers should: Conduct numerous research to ascertain how the IBL strategy impacts different language skills and how students perceive it, conduct a variety of studies on Jordan's schools and language levels, and benefit from and replicate the study's findings.

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