

أثر إستراتيجية التعلم المبني على الاستقصاء على مهارات القراءة الناقدة لدى طلبة الصف العاشر الأردنيين متعلمي اللغة الإنجليزية لغة أجنبية

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المخلص

هدفت هذه الدراسة في الكشف عن أثر استراتيجية التعلم المبني على الاستقصاء على مهارات القراءة الناقدة لدى طلبة الصف العاشر الأردنيين متعلمي اللغة الإنجليزية لغة أجنبية. تكونت عينة الدراسة من 60 طالباً تم توزيعهم عشوائياً وبالتساوي إلى مجموعتين، تجريبية وضابطة. اتبعت الدراسة المنهج شبه التجريبي، وأداة الدراسة المستخدمة كانت الاختبار قبلي-بعدي لغاية جمع البيانات. ولتحقيق هدف الدراسة تم تدريس المجموعة التجريبية باستخدام استراتيجية التعلم المبني على الاستقصاء، بينما تم تدريس المجموعة الضابطة باستخدام الطريقة التقليدية. وكشفت النتائج بأن مهارات التفكير الناقد لدى الطلبة تحسنت مقارنة بالمجموعة الضابطة. وفي ضوء النتائج توصي الدراسة باستخدام استراتيجية التعلم المبني على الاستقصاء في مختلف المهارات والمستويات عند الطلبة .

الكلمات المفتاحية: أكشن باك 10، مهارات القراءة الناقدة، متعلمو اللغة الإنجليزية لغة أجنبية، التعلم المبني على الاستقصاء، وزارة التربية والتعليم.

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The Effect of Inquiry-Based Learning Strategy on Jordanian EFL Tenth-Grade Students' Critical Reading Skills

Abstract

This study aimed to explore the effect of Inquiry-Based Learning (IBL) strategy on Jordanian EFL tenth-grade students' critical reading skills. The sample of the study consisted of 60 male students who were distributed randomly and evenly into two groups; experimental and control. The study followed a quasi-experimental approach, and the instrument the study used was a pre-/posttest for both control, and experimental groups for collecting. To achieve the purpose of the study, the experimental group was taught through IBL and the control group was taught using a conventional teaching method. The findings revealed that IBL strategy improved students' critical reading skills in comparison with the control group. In light of the findings of the study, the study recommends to use IBL strategy in different EFL skills and different levels of students.

Keywords: Action Pack 10, critical reading skills, EFL learners, Inquiry-Based Learning (the IBL) strategy, Ministry of Education.

Introduction

Reading refers to the practice of recognizing the meaning of transcribed words (Richards & Schmidt, 2013). Hence, it is defined as "a complex process in which a reader reconstructs, to some extent, a message encoded in graphic language by a writer" (Goodman & Niles 1970, p.5). Reading can be done silently, loudly, critically, or any mix of these. Particularly when reading critically, readers are more likely to react to what they have been reading. Reading critically also refers to reading outside the text and analyzing what readers have read. (Richards & Schmidt, 2013).

Reading increases students' vocabulary and grammar, forms their vision, gives them a wide information, and enables them to read critically and, sometimes, innovative (Mikulecky, 2008). "There will be little language learning where there is little reading" In EFL language lessons, reading is thought to be the first pillar of learning, coming before writing, listening, and speaking skills (Bright & McGregor, 1970, p. 52).

McClain (1985) described critical reading as the ability to read with a concentrating and inquiring mind. To assess and analyze what has been read, one must distinguish between fact and opinion, distinguish between necessary and unnecessary information, and take into account both the writer's and other people's points of view. Critical reading skills, according to Thistlethwaite (1990), also take into account the author's proficiency, personality, and objectivity.

According to Khodary & Abdallah (2014), critical reading skills include identifying personal biases, drawing inferences, locating the main idea, showing the purpose of the written text, figuring out the word's meaning in context, figuring out the author's intentional connotation, trying to identify causes and effects connections, and figuring out the tone.

Critical readers need to understand what they are reading, why they are reading, and how to analyze and understand what they have read to transfer their knowledge to real-world circumstances. Previous knowledge is necessary in critical reading since the reader must connect the text to outside criteria drawn from experience, studies, instructors, and specialists to draw these conclusions (Roe, Stood & Burns, 1991).

An effective strategy for learning a language is inquiry-based learning, which emphasizes engagement and discussion. Additionally, it is becoming more popular to

introduce language through inquiry, which makes learning a new language simpler for students (Alameddine & Ahwal, 2016). Teaching reading with traditional strategies should be replaced with more interactive ones. It is believed that IBL strategy is considered one of these innovative strategies (Harmer, 2001) (henceforth, IBL).

IBL strategy includes both problem-solving and discovery learning. IBL is a teaching and learning strategy that entails the following steps: By observing, drawing conclusions, formulating hypotheses, and exchanging ideas, students learn how to engage in processes of discovery and inquiry. There are other sources of information besides textbooks, and teachers adopt a teaching strategy that promotes research and inquiry (Richards, Platt & Platt, 1992).

Eight key components of an IBL strategy were presented by Harada & Yoshina (2004). These are: the learning process is inquiry-based; students engage in discussions about the content that will be covered; problem-solving is important; learning is dynamic; and results demonstrate the application of learning. Continuous evaluation is combined with real learning.

Students' concentration and interaction can be stimulated in their minds by using the IBL strategy. Additionally, it aims to expand students' interest in their classes. In this way, students can start reading autonomously and increase their desire to investigate new topics and ideas they enjoy. (Gregory & Kaufeldt, 2015).

Students face difficulties in reading (Amoush, 2012). Reading skills are taught in certain classrooms just as silent reading by some teachers without encouraging their students to think critically or come up with new ideas (Kailani, 1998; Al-Odwan, 2012). Many researchers, for example (Al-Makhzoumi, 1986; Al-Ansi, 1992; Al-Jamal; Al-Saraireh&Abu-Haija, 2007; Al-Hawamleh&Al-Jamal, 2013), have demonstrated that many Jordanian EFL students struggle with reading. Their findings revealed that inadequate instruction in reading comprehension skills had a negative impact on students' ability to read critically.

Statement of the problem

The researcher has seen that many EFL learners cannot read critically and have general weaknesses in reading. Some students think that textbooks are the most

important source of information. They also believe that the material that is written on the board rather than getting it through investigation or even understanding simplifies the information that they want to learn.

Skills in critical reading are essential for all students. Research (e.g., Abd Kadir, Subki, Jamal & Ismail, 2014) reveals that students are unable to use critical reading skills effectively. Additionally, if students want to be critical readers, they should be guided to evaluate, synthesize, and assess what they have read, as well as realize the purposes of their reading. The researcher assumes that an IBL strategy may enhance students' reading skills along with skills of critical reading.

Students' abilities in the 10th grade to understand texts, and apply critical reading skills to what they typically read (reading texts), and convey their understanding in varied situations are all noticeably lacking. In order to help students read critically, the researcher proposed using the IBL strategy.

The following are the reasons for especially selecting the IBL strategy to develop critical reading skills:

1. Today's students require a new strategy for learning since they are responsible and push themselves to improve their learning. Traditional teaching is therefore obsolete since, as educators are aware, the only way to prepare students for life as global citizens, career challenges, and constant questioning is to provide them with the skills of critical thinking, creativity, communication, and teamwork. Therefore, it is essential to provide learning that prompts students' wants and inquiries about the curriculum provided by teachers (Saqlain, 2016).
2. IBL strategy emphasizes students' roles in critical reading skills; through its students are able to discover, inquire questions, and compare their ideas.
3. Critical reading skills are considered the most important skills for improving higher-order thinking abilities and academic performance.

Purpose of the study

The current study aimed to investigate the effect of IBL strategy on Jordanian EFL tenth – grade students' critical reading skills.

Question of the study

This study seeks an answer to the following question: “Are there any statistically significant differences at ($\alpha = 0.05$) on Jordanian EFL tenth–grade students’ critical reading post–test scores that are attributed to instructional strategy (IBL strategy vs. conventional instruction)?”

Significance of the Study

This is one of the few studies that look into the effect of using the IBL strategy on students’ critical reading skills. The current study is significant as it will enable the Jordanian EFL tenth–grade students to improve their performance in critical reading skills through the IBL strategy. It seeks to clarify the great change of the IBL strategy on the improvement of students' critical reading skills. Moreover, the study is also important because it will guide EFL teachers in Jordan to become familiar with strategies that can teach reading along with critical reading.

The results will also be useful for textbook designers and stockholders who want to create textbooks that incorporate or make use of the IBL strategy. This study may also be helpful to EFL supervisors because it can spark their interest in organizing regular training sessions or in–depth seminars for their EFL educators in order to advance and improve the IBL strategy in the classroom. Moreover, it is hoped that it will help teachers motivate their learners to think critically.

Operational Definition of Terms

The study consists of several terms defined operationally as follows:

Inquiry–Based Learning Strategy (IBL) combines students' natural curiosity and a practical approach to improve students’ critical reading skills while learning English. This study alludes to the updated Action Pack 10 material that adapted the IBL strategy stages from the National Academy of Sciences (1996). These include asking questions, investigating, making predictions and using evidence to support them, linking evidence to information, and presenting the results of this strategy.

Critical reading skills help students analyze and synthesize concepts as well as assess the suitability and importance of what they read (Alqatanani, 2017). This study

refers to four skills to distinguish main and supporting ideas, identify similarities as well as differences, differentiate causes and effects, and distinguish facts from opinions.

Action Pack 12 is the twelfth book of the series adopted by the Jordanian MoE to teach English for grades one through twelve.

Limitations of the Study

Only participants from the Al-Taibah and Al-Wistyah Directorates of Education during the academic year 2022–2023 can be included in the study's findings. The study's findings can be applied to students who study under comparable situations or contexts.

Literature review

The researcher reviewed educational research before collecting studies related to this study.

Amro (2004) investigated the effect of utilizing strategies in critical reading lessons on the level of language proficiency of tenth graders at UNRWA schools in Jordan. The participants consisted of 200 male students in the tenth grade from the schools in the north of Amman. A pre–post reading test and a critical reading program were developed. The study's findings revealed that UNRWA's English teachers as a foreign language in Jordan's schools need more training in critical reading skills because students' levels in 46 critical reading were poor. More critical reading activities should also be incorporated into the EFL curriculum.

Abu–El–Samen (2008) examined the impact of inquiry and conventional learning styles on reading comprehension. The participants were 90 students at King Abdulaziz University in Jeddah, Saudi Arabia. Three groups were created from the sample. One hundred reading comprehension exams with multiple–choice and essay questions were used by the researcher. According to the findings, students who received instruction in cooperative and inquiry–based reading comprehension techniques performed better than those who received standard instruction.

Abu Eger (2009) explored how a game–based learning method at Khan–Younis schools affected students' ability to read creatively. The sample consisted of 70 sixth–grade students. Lists of new reading abilities, an innovation assessment, as well as the

instructional game program, were the study's instruments. The findings showed that the educational program had a considerable impact on the students' inventive reading abilities.

In Chu, Tse, and Chow's (2011) study, 143 students from Hong Kong primary schools who had accomplished IBL projects were examined to determine the impact of integrating a collaborative teaching style with inquiry-based learning. Self-report surveys, concentrated group discussions, telephone interviews, and in-person interviews were all used in the study. The results demonstrated that the program positively affected the students' development of many information competence as well as information technology abilities.

Alslaiti & Mgdadi (2012) looked into how a functionally based instructional approach affected the improvement of tenth-grade students' critical reading abilities. The study used a functionally-based teaching program to accomplish its goal, and a test with 12 multiple-choice questions was used to gauge participants' reading proficiency at crucial levels. 56 secondary school students from Beit Yafa made up the sample. The study's findings showed that the experimental group benefitted from statistically important variations in the reading exam that were caused by the training method.

Trimastuti (2012) investigated the effectiveness of the IBL strategy (viz., the 5E Model) in teaching reading to 72 tenth-grade students in Turkey. A pre-/ post-test and a questionnaire were used in this study. The findings revealed that the 5E Model was more effective in teaching reading than the conventional method.

Abadi (2014) investigated how IBL affected Iranian students' academic performance over an 8-week science course. During the academic year 2013-2014, two groups were employed, experimental and control groups with 40 female students in fifth grade in Kermanshah, Iran. A quasi-experimental design with a pre-posttest was used to collect data. The results showed that learners who utilized IBL performed better than those who employed conventional methods.

Ermawati & Pammu (2017) examined how IBL was used in reading classes and whether or not it increased students' reading comprehension. The researcher used a quasi-experimental design as well as pre- and post-tests in this study. There were 21 participants in the experimental group and 19 participants in the control group from the

third semester at STKIP Muhammadiyah Sidrap in Indonesia. The IELTS reading exam was used as an instrument. The results demonstrated that the experimental group participants did better on the post-test in comparison with the control group participants.

Sari (2017) asserted that 231 EFL students' reading skills may be improved through inquiry-based learning. The t-test was used on both experimental and control groups. The results showed that pupils' reading skills had developed, with a notable distinction between those who were trained through using IBL and those who were not.

Ermawati (2018) investigated the contribution of IB instruction to the EFL students' enhancement of reading comprehension. Data for the study were gathered through questionnaires and interviews using a mixed methods approach that included quantitative and qualitative methods. For the third-semester students, it was held at STKIP Muhammadiyah Sidrap. The findings indicated that IBL was in charge of the noteworthy findings.

Bataineh & Al-Shbatat (2019) looked into how the critical reading abilities of 85 Jordanian EFL ninth graders were affected through the use of questioning strategies. The study used pretests and posttests to collect data. The results revealed that compared to the control group, which got direct instruction from the Teacher's Book guidelines, the experimental group's critical reading abilities were improved more.

Bataineh and Alqatnani (2019) investigated the impact of thinking maps-based educational program on Jordanian EFL tenth-grade students' critical reading abilities in the academic year 2014-2015. A quasi-experimental method was used with two entire sections of tenth grade. 57 students from Zarqa's Jabal Tareq Basic School for Boys were the participants. To gather both quantitative and qualitative information, the researchers used pre-posttest and semi-structured interviews. In favor of the experimental group, the results showed significant statistical differences in the students' ability to read critically, and the qualitative analysis of the interview revealed that the participants found Thinking Maps to be very helpful.

Shraideh (2019) studied the effect of flipped classrooms on learners' critical reading skills in Jordan and their parents' attitudes towards it. There were three sections of tenth graders. A flipped model was used in a quasi-experimental design. To gather

data the researcher used pre–posttests and a questionnaire. The study's results demonstrated that the groups' differences were statistically different from one another. Barashid (2020) studied the impact of graphic organizers' strategies on Saudi Arabian students' critical reading skills. The sample was divided into two groups of 43 Saudi freshmen males from Al–Jouf Technology College. To assess critical reading abilities, a quasi–experimental design and pre–posttests were used. The findings revealed that the graphic organizers' strategies developed students' critical reading abilities.

Wale & Bishaw (2020) investigated if students' critical thinking skills were affected by using IBL. A quasi–experimental design was used with single–group participants. Twenty EFL students from Woldia University in Ethiopia were the sample for the study. The researcher applied advanced writing skills along with a comprehensive sampling method. According to data collection, tests, focus group discussions, and a student reflective journal were used. The findings showed that using IBL enhances students' critical thinking skills.

Wahab & Terasne (2020) explored whether the students' reading–related critical thinking was affected by using the IBL strategy or not. 18 students from the Education Science Faculty at Qamarul Huda University, Bagui, entered the academic year 2019–2020. The researcher adopted a one–group pretest–posttest pre–experimental design in this study. To collect data, the researcher used multiple–choice questionnaires. The study's findings revealed that students' reading and thinking were affected by using the IBL strategy.

Concluding remarks

Students–centered activities can be carried out when they interact with the contents and when conducting research using inquiry processes. IBL strategy, according to Gregory & Kaufeldt (2015), can increase students' interest and engagement while motivating their brains. Researchers have recently concentrated on this strategy to assist students in using critical reading skills effectively and reduce the communication gap between readers and the written word.

The majority of studies (e.g., Aslan, 2021; Wahab & Teranse, 2020) were done on the effectiveness of the IBL strategy indicated that it is sufficient to promote critical reading

and thinking. The IBL strategy takes into account students' learning and comprehension. Moreover, assists them in learning new information by assisting them in knowledge discovery, problem-solving research, and information evaluation (Sanjaya, 2006). In other words, maintaining a favorable learning atmosphere necessitates that students conduct research and think in accordance with a strategy developed by the teacher. The present study will help students use this strategy to think, investigate, broaden their contextual knowledge, inspire them to read critically so they can apply what they learn to real-life situations, and scaffold them. The purpose of the present study is to close the gap in the literature and explore innovative strategies to improve students' critical reading skills.

Method and procedures

Design of the study

In this study, the researcher used a quasi-experimental design through a pre\posttest for the experimental and control groups. IBL strategy is the independent variable, whereas the dependent variable is students' critical reading skills.

The study's participants

In the first semester of the 2022-2023 school year, 60 male EFL tenth-grade students from a conveniently chosen school (namely, Al-Taibah Comprehensive School for Boys, Al-Taibah district) were enrolled. This school was purposefully chosen because the researcher has worked there for eleven years and has the necessary resources to conduct the study. The researcher randomly chose two of the five tenth-grade sections from a basket and then assigned them into experimental and control groups randomly, with 30 participants in each group. The IBL strategy was used to treat the experimental group, whereas the control group was taught using conventional teaching strategies as suggested in the teacher's book.

Instruments of the Study

To achieve the research objectives, the researcher designed a pre–post critical reading test.

Critical Reading Test

A critical reading multiple–choice question test with 13 items was designed to achieve the study's goal. The test assesses four major abilities: distinguishing between main and supporting ideas (four questions), identifying similarities and differences (three questions), differentiating causes and effects (two questions), and distinguishing facts from opinions (two questions) (three questions). The test has a total score of 20.

According to the face and content validity of the critical reading test, the validity was evaluated by a jury. Adequacy, content, and language appropriateness were checked by the jury. The jury's comments and suggestions were all taken into consideration. Also, the test's content validity was evaluated using the table of specifications.

To assess the reliability (internal consistency) of the test, 20 students were piloted. Then, the Pearson Correlation Coefficient was extracted between the item score, the total score of its level, and the total score of the overall test. Also, a corrected item total correlation was extracted between the item score, and the total score of its level. Findings revealed that the values of the Pearson Correlation Coefficient and corrected item correlation were higher than the threshold value (0.70). Additionally, Cronbach Alpha coefficients for distinguishing main from supporting ideas, identifying similarities and differences, differentiating causes from effects, distinguishing facts from opinions, and the entire test are 0.82, 0.82, 0.75, 0.83, and 0.90, respectively. As such the test is valid and reliable and applicable to measure critical reading.

Instructional Program

The instructional program's goal is to give EFL Jordanian students in the 10th– grade practice using the IBL strategy to improve their critical reading skills. Students who employ the IBL strategy may acquire material more quickly and effectively while also feeling motivated to progress in their studies. This course of study lasted for eight weeks. It commenced on March 6, 2022, and concluded on September 11, 2022.

Action Pack 10's units 1, 2, 3, and 4's critical reading exercises have been revised to take advantage of the IBL strategy. For an eight-week period, the critical reading assignments for each unit were split into two sessions of 45 minutes each.

The Instructional Material

The four units' reading activities from Action Pack 10's student book and activity book serve as the foundation for the study's teaching program (units 1, 2, 3, and 4). The IBL strategy was used to redesign the activities by the researcher.

The Instructional Program's validity

To ensure the instructional program's validity, it was checked by a jury of fifteen English curriculum and educational specialists as follow professors, instructors, English language supervisors, and EFL teachers at the Ministry of Education. Any ideas or suggestions are offered to the researcher by the jury. Introducing a practical lesson on how to teach critical reading skills using the IBL strategy was one of the jury's suggestions. The modifications were made by the researchers as they had recommended. The researchers implemented the changes as they had advised.

Results

To investigate the effect of the IBL strategy on overall critical reading skills, the means and standard deviations of pre- and post-test scores in the overall critical reading test for the experimental and control groups were calculated, as shown in Table 1:

Table 1: Means and Standard Deviation of the Overall Critical Reading Skills for the Pre-Test and Post-Test

Critical reading skills	Group	Pre-test		Post-test	
		Mean	S. D	Mean	S. D
Overall	Control	6.03	3.48	9.50	3.35
	Experimental	6.90	2.84	15.73	2.60
	Total	6.47	3.18	12.62	4.33

Table 1 reveals that there is a noticeable difference between the post-test performance means of the experimental and the control groups. In terms of overall critical reading skills, as measured by the critical reading skills test, the experimental group's mean score is higher than the control group.

The researcher used a one-way analysis of covariance (ANCOVA) to investigate the statistically significant effect of the learning method (i.e., inquiry-based learning and conventional learning) on overall critical reading skills after controlling for the effect of overall pre-test scores, as shown in Table 2.

Table 2: Results of One-Way ANCOVA to Assess the Effect of Learning Strategy on the Overall Critical Reading Skills

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pre-test	98.104	1	98.104	13.211	.001	.188
Learning strategy	508.590	1	508.590	68.491	.000	.546
Error	423.263	57	7.426			
Corrected Total	1104.183	59				

Table 2 shows that there is a statistically significant observable difference between the experimental group's mean and the control group's mean in favor of the experimental group. With a partial eta squared value of 0.546, the learning strategy accounted for 54.6% of the variance in overall critical reading skills. Additionally, the unadjusted and adjusted means of the two groups' overall critical reading skills were extracted. Table 3 shows the means, standard errors, and standard deviations of the two groups in the overall critical reading skills before and after controlling for the pre-test scores.

Table 3: Unadjusted and Adjusted Means of the Overall Critical Reading Skills

Group	Unadjusted Mean		Adjusted Mean	
	Mean	S.D.	Mean	Std. Error
Control	9.50	3.35	9.68	.500
Experimental	15.73	2.60	15.56	.500

As shown in Table 3, there is an observed difference between the two groups in the overall critical reading skills after the differences in the overall critical reading skills pre-test scores were controlled. As such, the IBL strategy enhanced the overall critical reading skills.

To investigate the effect of the IBL Strategy in critical reading skills, the means and standard deviations of pre-and post-test scores in critical reading skills for the two groups were calculated, as shown in Table 4.

Table 4: Means and Standard Deviation of Critical Reading Skills for the Pre-Test and Post-Test

Critical reading skills	Group	Pre-test		Post-test	
		Mean	S. D	Mean	S. D
Distinguishing main and supporting ideas (S1)	Control	1.53	1.33	3.27	1.68
	Experimental	1.73	1.41	4.53	1.28
	Total	1.63	1.37	3.90	1.61
Identifying similarities and differences (S2)	Control	1.87	1.81	2.87	2.01
	Experimental	2.27	1.80	5.00	1.36
	Total	2.07	1.80	3.93	2.02
Differentiating causes and the effects (S3)	Control	1.20	1.21	1.33	1.12
	Experimental	1.03	1.13	2.23	.94
	Total	1.12	1.17	1.78	1.12
Distinguishing facts from opinions (S4)	Control	1.43	1.85	2.03	1.30
	Experimental	1.87	1.66	3.97	1.27
	Total	1.65	1.75	3.00	1.61

In Table 4, there are apparent differences between the arithmetic mean of the two study group's post-test performance in the four critical reading skills. The post-

performance scores of the experimental group are higher than the mean scores of the control group in the four critical reading skills.

To examine the effect of the learning strategy (i.e., IBL strategy and conventional method) on the linear combination of the critical reading skills after controlling the effects of pre-test scores, a one-way Multivariate Analysis of Covariance (One-way MANCOVA) using a multivariate test (Hotellings' Trace) was conducted. Table 5 illustrates the results.

Table 5: Results of Multivariate Test (Hotellings' Trace) to Assess the Effect of Learning Strategy in Critical Reading Skills

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Learning strategy	1.598	20.369	4.000	51.000	.000	.615

Table 5 shows that the main effect of the learning strategy was significant. This indicates that the linear composite of the critical reading skills differs across the two groups. The partial eta square value of 0.615 indicates that the learning strategy explains 61.5% of the variance in the critical reading skills composite. Because the learning strategy had a significant effect, a follow-up univariate analysis (tests of between-subject effects) was conducted, as shown in Table 6.

Table 6: Results of Between Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Pre-S1	Distinguishing main and supporting ideas	17.502	1	17.502	8.949	.004	.142
Pre-S2	Identifying similarities and differences	40.654	1	40.654	17.061	.000	.240
Pre-S3	Differentiating causes and the effects	8.661	1	8.661	9.412	.003	.148
Pre-S4	Distinguishing facts from opinions	18.303	1	18.303	13.843	.000	.204
Learning strategy	Distinguishing main and supporting ideas	17.796	1	17.796	9.099	.004	.144
	Identifying similarities and differences	54.006	1	54.006	22.665	.000	.296
	Differentiating causes and the effects	15.032	1	15.032	16.335	.000	.232
	Distinguishing facts from opinions	46.903	1	46.903	35.474	.000	.396
Error	Distinguishing main and supporting ideas	105.616	54	1.956			
	Identifying similarities and differences	128.673	54	2.383			
	Differentiating causes and the effects	49.691	54	.920			
	Distinguishing facts from opinions	71.397	54	1.322			
Corrected Total	Distinguishing main and supporting ideas	153.400	59				
	Identifying similarities and differences	239.733	59				
	Differentiating causes and the effects	74.183	59				
	Distinguishing facts from opinions	152.000	59				

Table 6 shows that the experimental group outperformed the control group in distinguishing main and supporting ideas, identifying similarities and differences, differentiating causes and effects, and distinguishing facts from opinions. The partial eta squared values for identifying similarities and differences, distinguishing causes and effects, and distinguishing facts from opinions were 0.144, 0.296, 0.232, and 0.396, respectively. This means that the learning strategy explained 14.4%, 29.6%, 23.2%, and 39.6% of the variation in critical reading skills.

Furthermore, the unadjusted and adjusted means of the four critical reading skills were computed. Table 7 shows the means, standard errors, and standard deviations of the two groups in the four critical reading skills before and after controlling for critical reading pre-test scores.

Table 7: Unadjusted and Adjusted Means of the Critical Reading Skills

Dependent Variable	Group	Unadjusted mean		Adjusted mean	
		Mean	S. D	Mean	S. E
Distinguishing main and supporting ideas	Control	1.53	1.33	3.35	.26
	Experimental	1.73	1.41	4.45	.26
Identifying similarities and differences	Control	1.87	1.81	2.97	.28
	Experimental	2.27	1.80	4.90	.28
Differentiating causes and the effects	Control	1.20	1.21	1.28	.18
	Experimental	1.03	1.13	2.29	.18
Distinguishing facts from opinions	Control	1.43	1.85	2.10	.21
	Experimental	1.87	1.66	3.90	.21

Table 7 shows that after controlling for differences in pre-test scores, there are differences between the two groups in the four critical reading skills. As a result, the IBL strategy improved students' performance in four critical reading skills.

Discussion

The findings indicated that the critical reading skills of the participants differed favorably between the experimental and the control groups. This shows how the IBL strategy may be able to help participants improve their critical reading abilities. In this way, it can be said that the IBL strategy helped students enhance their critical reading skills across all four areas. Additionally, students' general critical reading skills improved according to the IBL strategy.

The results for the experimental group showed that the students performed better than those in the control group. This beneficial outcome is linked to the IBL strategy's capabilities, which enable all students in a group to answer the same question simultaneously, and promote student cooperation while they practice their critical reading skills. The IBL technique made a significant difference in the development of critical reading abilities.

The increase in self-confidence and engagement was fostered by the IBL strategy. Additionally, involving them in the learning process, motivated students to respond to the questions. Involving, motivating, and integrating students in a variety of reading assignments was one of the objectives of the IBL strategy to aid students in developing their critical reading skills. Additionally, the researcher employed a wide range of reading exercises that called for students to give responses either individually or in groups.

Using the IBL strategy in the classroom to teach reading skills enhanced EFL students' ability to understand information. These findings are consistent with those of other research that supports the use of varied strategies and the IBL strategy in particular (e.g., Sari, 2017; Ermawati, 2018; Shraideh, 2019; Wale & Bishaw, 2020).

Conclusion

This study aimed to determine how the IBL strategy affected Jordanian students in the tenth grade's development of their critical reading skills. Over the academic year 2022–2023, the IBL strategy instructional program was developed and implemented to fulfill this purpose. Inferences made from the results of the current investigation include the following:

1. The IBL strategy gives students a better learning environment, which is positively reflected in their English critical reading skills.
2. Participants' Collaborative thinking skills are increased through the IBL strategy.
3. The IBL strategy has increased students' reading performance.
4. Instead of using direct instruction, the IBL technique encouraged students to practice English independently. The collaborative activities and tasks made this very evident.
5. Students benefited greatly from the IBL strategy in terms of fun, enjoyment, and excitement.

Recommendations

The following recommendations are made for curriculum designers and decision-makers, teachers, supervisors, the Ministry of Education, and researchers based on the study's findings:

1. Designers of curriculum and decision-makers should concentrate on improving English language curricula by adding more analytical reading abilities. In order to support teachers in focusing on student quality, it is also important to extend English language periods. Along with providing additional solutions, they should also give schools the resources they need to implement the inquiry learning strategy.
2. The Supervisors produce and disseminate educational materials to help teachers understand the value of the IBL strategy and the importance of adopting it when teaching English. They also hold workshops to help instructors become more familiar with various language-learning strategies.
3. It is advised that EFL teachers use the current educational program to raise students' performance in critical reading sessions and assist students in overcoming obstacles. Teachers should also establish a productive learning atmosphere.
4. Other studies examine the effect of the IBL strategy on the grades of other students and conduct additional research on the application of the IBL strategy to other skills like speaking, writing, and listening.

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