

The Impact of Active Recall Strategy on EFL School Student's Achievement in Reading

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Abstract

This study explores the impact of the Active Recall Strategy on enhancing reading and writing skills among Iraqi EFL first intermediate school students. The purpose is to assess whether using active recall techniques can significantly improve students' performance in the components of reading (skimming, scanning, guessing meaning, inferring ideas) The quasi-experimental design includes two groups: an experimental group taught using Active Recall Strategy and a control group taught using conventional methods. The findings are expected to provide valuable insights for EFL teachers, curriculum developers, and researchers regarding the effectiveness of memory-based and learner-centered strategies in the classroom.

Keywords: (Active memory strategy, reading comprehension, academic achievement).

اثر استراتيجية التذكر النشط في تحصيل طلبة المدارس من دارسي اللغة الإنجليزية - لغة أجنبية
في مهاراه القراءة

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المخلص

تستكشف هذه الدراسة تأثير استراتيجية التذكر النشط في تحسين مهارات القراءة والكتابة لدى طلاب المرحلة المتوسطة الأولى في العراق الذين يدرسون اللغة الإنجليزية كلغة أجنبية. وتهدف إلى تقييم ما إذا كان استخدام أساليب التذكر النشط يُحسن أداء الطلاب بشكل ملحوظ في مكونات القراءة (التصفح السريع، والمسح، وتخمين المعنى، واستنتاج الأفكار). يتضمن التصميم شبه التجريبي مجموعتين: مجموعة تجريبية تُدرّس باستخدام استراتيجية التذكر النشط، ومجموعة ضابطة تُدرّس بالطرق التقليدية. ومن المتوقع أن تُقدّم النتائج رؤية قيّمة لمعلمي اللغة

الإنجليزية كلغة أجنبية، ومطوري المناهج، والباحثين حول فعالية الاستراتيجيات القائمة على الذاكرة والمتمحورة حول المتعلم في الفصل الدراسي.

الكلمات المفتاحية: (استراتيجية التذكر النشط، فهم المقروء، التحصيل الدراسي).

1.1 Statement of the Problem

Language is a key tool for global communication, and English, as an international language, connects various aspects of life (White, 1988). The main goal of teaching English as a foreign language (EFL) is to help students effectively use all four skills: listening, speaking, reading, and writing. However, EFL learners in non-English speaking countries face challenges such as mastering vocabulary, grammar, pronunciation, and fluency (Field, 2009). Research by McCredie & Hoff (2006) and Hoffman (2001) highlights issues like untrained teachers, poor methods, and ineffective curricula. Souriyavongsa et al. (2013) note that many teachers fail to reinforce all four skills. Based on the researcher's experience, the lack of active recall strategies is a key problem. This neglect leads to low student participation, anxiety, limited vocabulary, and poor expression. Therefore, this study investigates the impact of active recall on students' achievement.

1.2 Aims of The Study

1. Find out the effect of using the Active Recall Strategy on improving EFL intermediate school students' reading comprehension.
2. Find out the effect of using the Active Recall Strategy on improving EFL intermediate school students' four components of Reading skills. a. Skimming b. Scanning c. Guessing meaning d. Inferring ideas.

3. Find out Finding out the effectiveness of Active Recall Strategy on the experimental groups achievement at the recognition and production levels.

1.3 Hypotheses of the Study

The hypotheses of the current study are:

1. There are no statistically significant differences between the mean scores of the experimental group which is taught using the Active Recall Strategy, and the control group which is taught using the conventional method in the reading comprehension posttest.
2. There are no statistically significant differences between the mean scores of the experimental group in four components of the reading comprehension posttest a. Skimming, b. Scanning, c. Guessing meaning, and d. Inferring ideas.
3. There is no statistically significant difference between the mean scores of the experimental group at the recognition and production levels in the posttest, as measured by the paired samples t-test.

1.4 Limit the Study

This study is limited to:

1. The use of the Active Recall Strategy on students' achievement in reading.
2. The prescribed textbook English for Iraq (Students' Book and Activity Book).Iraqi EFL first Intermediate School students at Al-Sabah Intermediate School for Girls, Kirkuk Government.

3. The second semester of the academic year 2024-2025.

1.5 Value of the Study

The Value of the current study can be summarized as follows:

1. This study may be benefited for English Language teachers as it provides insights into how Active Recall Strategy can be used effectively in teaching reading skill. It also suggests alternative teaching method that can enhance students achievement.
2. It may serve as a useful reference for researchers interested in exploring new strategies for teaching EFL, especially those related to active learning and memory based approaches.
3. The finding of this study can provide curriculum planners and textbook designers with valuable feedback on how to integrate active learning strategies into English Language curriculum for intermediate school students.

1.6 Definition of the Basic term

1.6.1 Impact

Hearn and Buffard (2016) state that impact is an important role in the development procedures, management, design and evaluation methods of a plan.

1.6.2 Active Recall

Active recall is one of the best, most powerful, and most efficient ways to learn anything quickly. Active recall is study method in which you actively stimulate your memory to retrieve specific information (Owen,2022).

1.6.3 Achievement

Achievement in language learning refers to how much of a language a learner has acquired in relation to a particular course of instruction (Richards and Schmidt, 2002).

1.6.4 Reading

According to Medina (2012), Reading is crucial because, it is one of the most commonly used language skill in everyday life, especially with the widespread use of the internet , where most content encountered by students is in English.

2.0 Theoretical Background and Literature Review

2.1 Historical Background of Active Recall Strategy

The active recall method helps convert passively received information into active, long-term memory. Since the brain tends to forget passive input, active recall makes the information more meaningful and memorable. Various active recall strategies can be used to enhance understanding (Karapick & Roediger, 2008).

2.1.2 Ways to Use Active Recall Strategy in Class

Agarwal & Bain(2019). There are many ways to use active recall :

1. Low-stakes Quizzes

- Frequent low-stakes quizzes are an easy way to incorporate Active Recall.

can be free response, multiple choice, or various formats. In-class polling is also an effective technique to reinforce retrieval.

Student feedback can be automatic (in the case of online quizzes), from the instructor, or from peers.

- Questions should be neither too hard nor too easy. The goal is to achieve "desirable difficulty."

2. Two Things Reflection Activity

- Ask students to recall and write down two things they learned today, in the previous session or during a specific unit of the course.

Feedback can come from peers (in pairs or groups), or class.

2.1.3 Advantage of Active Recall Strategy

Active Recall is a powerful learning strategy that enhances long-term memory and supports academic success, especially for intermediate students. Dunlosky (2013) highlights its role in improving retention, identifying learning gaps, and promoting deeper cognitive engagement. Atherton (2024) notes that it strengthens memory by forming connections between new and prior knowledge, interrupting the forgetting curve. Active recall also supports peer-assisted learning and self-assessment through tools like quizzes and flashcards, encouraging self-regulation and a growth mindset.

2.1.4 Disadvantage of Active Recall Strategy

Although research generally supports the effectiveness of active recall, one notable limitation concerns individual learner characteristics, such as prior knowledge and recall ability. Additionally, active recall may initially appear counterintuitive because it requires significant cognitive effort and makes studying more demanding. However, this effortful process is actually

beneficial as more active engagement with learning materials leads to better long-term retention. Therefore what may seem like a disadvantage is, in fact, one of the key strengths of active recall (Sheik, 2022).

2.1.4 The Role of the Teacher in Active Recall Strategy:

Teachers play a key role in supporting active recall by creating a supportive learning environment, modeling recall techniques, and promoting a growth mindset (Karpicke & Blunt, 2011). Nguyen (2022) emphasizes the importance of balancing guided support with independent work to help students gradually develop recall skills. Teachers can also teach metacognitive strategies, help students highlight key information, and encourage student responsibility for learning. For students who struggle with generating recall aids, Tsai et al. (2020) suggest using teacher-provided outlines or summaries. Since recall needs vary, teachers should adjust their support accordingly. Wu et al. (2024) recommend using assessment data to tailor recall strategies to meet diverse student needs.

2.1.5 Principles of Reading Comprehension:

Walter (2010) identified seven key principles for effective reading comprehension instruction:

1. **Balanced Instruction:** Emphasize core reading skills like phonemic awareness, decoding, vocabulary, fluency, and comprehension.
2. **Learning Through Texts:** Use reading to build knowledge and experience across content areas.
3. **Cultural Relevance:** Connect instruction to students' home, community, and cultural backgrounds.

4. Purposeful Assessment: Use varied assessments strategically to guide teaching.
5. Language Development: Support both academic and social language, in oral and written forms.
6. Whole-Child Approach: Address health, home, and emotional factors that affect literacy.
7. Teacher Support: Invest in quality teacher training and ongoing professional development.

2.1.6 Essential Components of Reading:

According to the National Reading Panel, five essential components support effective reading instruction (Read Naturally):

1. Phonemic Awareness: The ability to hear and manipulate individual sounds in words—crucial for early reading success.
2. Phonics: Understanding the relationship between letters and sounds to decode and spell words. Systematic phonics instruction is proven to be highly effective.
3. Fluency: Reading with speed, accuracy, and expression. Repeated and guided oral reading improves fluency and comprehension.
4. Vocabulary: A strong vocabulary supports comprehension. It should be taught directly, indirectly, and through rich, repeated exposure.
5. Comprehension: The ability to understand and interpret text, developed through strategies like questioning and summarizing.

3.0 Methodology and Procedure.

The researcher describes the processes that were employed to achieve the aims of the study, including the experimental design, the study's population and sample, and equalization between the students of the experimental and control groups. The instrument that was utilized in this investigation and how it was used are also explained. Finally, the statistical methods that were utilized to analyze the data and the interpret the results are presented.

3.1 Experimental Design

The experimental design is" the framework of the procedures that help the researcher examine the hypotheses by providing at relevant results on the relationship between independent and dependent variables" (Best and Khan, 2006).

The experimental design of this study is titled the equivalent-group pre-posttest, design, which includes the following steps:

1. Selecting two groups of students randomly and assigning them to experimental and control groups.
2. Making equalization between experimental, and control group, in certain variables.
3. Administering the independent variable only to the experimental group.
4. Teaching the control group the same instructional material taught to the experimental group, but according to the traditional method.
5. post-testing both the experimental and control groups.

6. Using statistical tools in order to analyze the collected data and obtain the final results.

Groups	Number
Experimental	32
Control	32
Total	64

1.2 The Sample and Population

The population of the present study includes all of the intermediate schools in the city of Kirkuk during the academic year 2024–2025. The total number of first intermediate students is 395 girls distributed into five intermediate schools for girls in Kirkuk City. A The target sample of the present study includes sixty– four students in the city of Kirkuk, during the academic year 2024–2025. The students are grouped into two sections: A and B. Sections A and B have been randomly selected to be the experimental and control groups whose total number is sixty – four. Section A consists of thirty–two students for the experimental group and section B consists of thirty– two students for the control group.

NO.	Intermediate School	Population	Pilot	
1.	AL–Sabah Intermediate School for Girls	80	64	16
2.	AL– Taqadm Intermediate School for Girls	84		
3.	Eskan Intermediate School for Girls	75		

4.	Bakhan Intermediate School for Girls	83		
5.	AL-Wafaa Intermediate School for Girls	73		
Total		395		

3.3 Equivalence of the Two Groups

To ensure internal validity, both groups were equalized in terms of the following criteria:

- Age: Mean ages were compared using a t-test.
- Parents' Educational Level: Chi-square test was used for fathers' and mothers' education.
- Previous Year's English Grades: Students' scores from the 2023–2024 academic year were compared.

1.3 Instructional Material and Students' Instruction

The material which has been taught to the two groups of students consists of fifth and sixth units of the student's textbook, English for Iraq for first intermediate students. The researcher selected only two units from English for Iraq for the purpose of this study.

1.4 Construction of the Achievement Posttest

According to McNamara (2000) achievement tests are limited to specific material covered in a curriculum within a question. They can serve as indicators of areas that a student needs to improve in the future. The primary role of an achievement test is to assess students' attainment of course objectives at the end of the instruction period. An achievement post-test has been given to students in which there are six questions.

The first, second, and fifth questions are recognition type, while the third, fourth, and sixth are production type.

1. Question One

- Part A: Read the passage and answer 6 questions (12 marks).
- Part B: Identify 4 reading strategies used (8 marks): skimming, scanning, guessing meaning, inferring ideas.

2. Question Two

- Complete 6 sentences using words from a box (12 marks).
- Assesses reading skill.

3. Question Three

- Part A: Rearrange and punctuate 5 sentences (20 marks).
- Part B: Rewrite a paragraph to improve vocabulary, grammar, organization, and mechanics (5 items, 10 marks).

4. Question Four

- Write a short paragraph (100 words) about your favorite city (10 marks).
- Focus: content, organization, vocabulary, language use, and mechanics.

5. Question Five

- Read a paragraph and answer 4 questions (8 marks).
- Focus: skimming, scanning, guessing meaning, and inferring ideas.

6. Question Six

- Answer 5 textbook-based items (20 marks).

1.5 Validity of the Test

validity refers to the appropriateness of the test and its components in measuring they are intended to measure (Henning, 1987). It concerns the extent to which the interpretation and inferences drawn from test results are defensible and based on sound reasoning (Fraenkel et al 2012).

1.5.1 Face Validity

"Face validity refers to the degree to which a test looks right and appears to measure the knowledge or abilities it claims to measure, based on the subjective judgment of the examinees who take it, the administrative personnel who decide on its use, and other psychometrically unsophisticated observers" (Mousavi, 2002).

1.5.2 Content Validity

Pennington (2003) claims that content validity refers to the degree to which an assessment instrument is relevant to aspects, and representative of the targeted construct it is designed to measure. It represents all aspects of a given concept. It is also defined as the degree to which the elements of an assessment instrument are relevant to and representative of the target construct for a particular assessment purpose (Saiful, 2019). Content validity is achieved through the use of a table of specifications. In this study, the content was selected from the textbook "English for Iraq" (First Grade).

1.6 Reliability

A pilot test was conducted on a group outside the study sample. The Cronbach's alpha coefficient was calculated to ensure internal consistency.

1.7 The Pilot Administration of the Posttest

According to (Good et al, 1973) pilot study is a preliminary investigation using a test sample to the researcher identify potential obstacles. The aim of the pilot study is to inform the researcher about the functioning the test system and to estimate the time required to complete all test items or questions. Accordingly, the test was administered to a pilot sample of 16 students randomly selected from each of the two participating sections, namely (A) and (B). The results showed that it took between 40 and 45 minutes to complete all of the test items, and that the test's instructions were clear.

3.8 Item Analyses

3.8.1. Difficulty Level The difficulty level (Henceforth DL) is specified as the ratio of the students who answered correctly to each item (Rosas, 2000). Item difficulty refers to the extent to which an item appears to be easy or difficult for a given number of tests. It just reflects the percentage of learners who answered the item correctly. The most suitable test item will have item difficulty varying between 0.15 and 0.85 (Brown, 2010). It was found that the current test items' DL ranges from 0.31 to 0.81.

3.8.2 Discrimination Power (DP) measures how well a test item distinguishes between high- and low-performing students (Alderson, 1995). A high DP (close to 1.0) indicates good discrimination, while a DP near 0.0 shows poor discrimination (Brown, 2010). In this test, DP values ranged from 0.25 to 0.80.

Difficulty Level and Discrimination Power of the Test Items

	Items	High Group	Low Group	Discrimination Power	Difficulty level
Q1/A	1	8	2	0.50	0.35
	2	6	2	0.33	0.50
	3	4	0	0.33	0.56
	4	4	1	0.25	0.62
	5	7	2	0.41	0.68
	6	5	1	0.33	0.81
Q1/B	1	7	2	0.41	0.43
	2	8	0	0.66	0.50
	3	7	0	0.58	0.56
	4	4	0	0.33	0.75
Q2	1	7	2	0.41	0.43
	2	7	0	0.58	0.62
	3	6	0	0.50	0.62
	4	5	0	0.41	0.68
	5	5	0	0.41	0.68
	6	3	0	0.25	0.81
Q3/A	1	8	2	0.60	0.37
	2	7	3	0.40	0.37
	3	8	0	0.80	0.50
	4	6	0	0.60	0.62
	5	6	0	0.60	0.62
Q3/B	1	7	2	0.50	0.43
	2	8	0	0.80	0.50
	3	7	0	0.70	0.56

	4	8	0	0.80	0.50
	5	8	2	0.60	0.37
Q4/A	1	8	2	0.60	0.37
	2	8	1	0.70	0.43
	3	7	3	0.40	0.37
	4	8	3	0.50	0.31
	5	6	0	0.60	0.62
Q4/B	1	8	2	0.60	0.37
	2	7	1	0.60	0.50
	3	8	3	0.50	0.31
	4	6	0	0.60	0.62
	5	7	1	0.60	0.50
Q5	1	7	2	0.62	0.43
	2	8	1	0.70	0.43
	3	7	0	0.70	0.56
	4	5	2	0.50	0.68
Q6	1	8	2	0.30	0.37
	2	7	1	0.60	0.50
	3	7	1	0.60	0.50
	4	8	0	0.80	0.50
	5	8	1	0.70	0.43

4.00 Analysis of Data and Discussion of Result

4.1 Results Related to the First Hypothesis

To test the first hypothesis, an independent samples t-test was used to compare the reading comprehension posttest scores of the experimental group (taught using Active Recall) and the control group (taught conventionally). Results show the experimental group had a mean score of

23.53 (SD = 6.75), while the control group scored 17.97 (SD = 5.74). The calculated t-value (3.549) exceeds the tabulated value (2.00) at the 0.05 significance level (df = 62), indicating a significant difference in favor of the experimental group. Thus, the first null hypothesis is rejected.

Means, Standard Deviation, and t-Values of the Two Groups in Reading Comprehension at the Achievement Posttest

Group	N.	Mean	S.D.	T-Value		DF	Level of Significance
				Calculated	Tabulated		
Experimental	32	23.531	6.753	3.549	2.00	62	0.05

4.1.2 Results Related to the Second Hypothesis

To test the second hypothesis, a one-way ANOVA was used to compare the experimental group's posttest scores across four reading comprehension components: skimming, scanning, guessing meaning, and inferring ideas. This analysis determines if significant differences exist among the mean scores for these skills. In the table shows that the calculated F-value (0.585) is lower than the tabulated value (2.7) at the 0.05 significance level (DF = 3,124), indicating no significant differences among the experimental group's scores in skimming, scanning, guessing meaning, and inferring ideas. Thus, the fourth hypothesis is accepted.

Mean scores were: Skimming (2.63), Scanning (2.56), Guessing meaning (2.50), and Inferring ideas (2.19).

Comparisons of Means Among the Reading Components (Scheffe)

Reading Component	N	Subset for alpha = 0.05
		Mean scores
		1
Inferring ideas	32	2.187
Guessing meaning	32	2.500
Scanning	32	2.562
Skimming	32	2.625
Significance		.687
The means for groups within homogeneous subsets are displayed.		
a. The analysis uses harmonic mean sample size of 32		

4.1.3 Results Related to the Third Hypothesis

To test the third hypothesis, a paired samples t-test compared the experimental group's posttest scores at the recognition and production levels. The mean scores were 23.53 and 40.34, respectively. The

calculated t-value (16.873) exceeded the tabulated value (1.70) at the 0.05 level (df = 31), indicating a significant difference in favor of the production level. Thus, the fifth hypothesis is rejected.

Mean Scores, Standard Deviation, and T-Value of the Experimental Group at the Recognition and Production Levels in the Posttest

Group	N.	Mean	S.D.	T-Value		DF	Level of Significance
				Calculated	Tabulated		
Recognition	32	23.531	6.753	16.873	1.70	31	0.05
Production		40.343	9.979				

5.1 Conclusion

The present study has come up with some conclusions, the most important of which are the following:

1. Active Recall Strategy has a positive effect on improving the reading comprehension skills of EFL intermediate school students. The achievement of the experimental group which is taught using the Active Recall Strategy, is better than that of the control group.
2. The use of the Active Recall Strategy helped students improve their overall reading comprehension in a balanced and consistent way. No single skill showed.

5.2 Recommendation

Based on the above conclusion, the following recommendations are proposed:

1. Specialists in teaching EFL are advised to use Active Recall to improve their students' achievement in various language skills.
2. There is no single best way to teach English. Therefore, educators should be free to use strategies, methods, and exercises that suit the abilities and levels of their students.
3. In order to engage students in learning activities, teachers must choose a stimulating topic for the classroom that is appropriate for the students' level and clearly define the lesson's objectives.
4. Teachers at schools are advised to use Active Recall in teaching the English language to improve their students' reading skills.

5.3 Suggestions for Further Studies

Based on the current study, the following suggestions are proposed for further studies:

1. Investigate the development of new assessment tools to better measure the impact of Active Recall on Speaking skills.
2. Examine the role of peer collaboration in enhancing the effectiveness of Active Recall among EFL students.
3. Investigate the effect of the Active Recall strategy on improving students' creative thinking.
4. The impact of Active Recall on improving students' preparatory school reading and listening skills.

5. Compare the effectiveness of Active Recall and Passive Review on reading comprehension and writing accuracy among preparatory EFL students.

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