



The effect of employing different reading strategies on reading comprehension of EFL Libyan Students by using the Think-Aloud Protocol

Dr. Faisal Moftah Rajeb Khellab¹, Mrs. Arbia Saleh Salem Elghoul^{2*}
^{1,2} Faculty of Engineering Technology, Janzour, Libya

*Corresponding author: elghoularbia@yahoo.com

Received: November 03, 2023

Accepted: December 28, 2022

Published: January 11, 2024

Abstract:

This study explored the reading strategies employed by upper- intermediate and advanced-level Libyan EFL learners. The purpose of this study is to find the most effective reading strategies used by Libyan EFL students for tackling the reading task and answering the test. Also, to study the effects of employing the think-aloud protocol on their reading performance, in this study, the think-aloud protocol was used. The investigation found that the advanced EFL learners were keen to use more strategies in their attempt to comprehend the texts at hand when compared to the upper-intermediate students. The lower-proficient students got stuck during the reading task and had to be helped and prompted to stay on track. They also employed strategies less frequently when compared with the advanced students. It is clear that as the student's proficiency levels increased, so did their conscious use of strategies and confidence.

Keywords: Reading Comprehension, Reading Strategies, Think-Aloud Protocols.

أثر توظيف استراتيجيات القراءة المختلفة في الفهم القرائي لدى الطلاب الليبيين في اللغة الإنجليزية كلغة أجنبية باستخدام بروتوكول التفكير بصوت عال

د. فيصل مفتاح الخلاب¹، عربية صالح سالم الغول^{2*}
^{1,2} كلية التقنية الهندسية، جنزور، ليبيا

الملخص

استكشفت هذه الدراسة استراتيجيات القراءة التي يستخدمها متعلمو اللغة الإنجليزية كلغة أجنبية في المستويات العليا والمتوسطة والمتقدمة. وفقا لغرض هذه الدراسة، العثور على استراتيجيات القراءة الأكثر فعالية التي يستخدمها طلاب اللغة الإنجليزية كلغة أجنبية للبيبين لمعالجة مهمة القراءة والإجابة على الاختبار وتأثيرات توظيف بروتوكول التفكير بصوت عال على أداء القراءة لديهم. في هذه الدراسة، تم استخدام بروتوكول التفكير بصوت عال. وجدت الدراسة أن متعلمي اللغة الإنجليزية كلغة أجنبية المتقدمين كانوا حريصين على استخدام المزيد من الاستراتيجيات في محاولتهم لفهم النصوص الموجودة في متناول اليد، بالمقارنة مع طلاب المستوى فوق المتوسط. لقد تعثر الطلاب ذوو الكفاءة المنخفضة أثناء مهمة القراءة وكان لا بد من مساعدتهم وحثهم على البقاء على المسار الصحيح. كما أنهم استخدموا الاستراتيجيات بشكل أقل تكرارًا بالمقارنة مع الطلاب المتقدمين ومن الواضح أنه مع ارتفاع مستوى إتقان الطلاب، زاد أيضًا استخدامهم الواعي للاستراتيجيات والثقة.

الكلمات المفتاحية: الفهم القرائي، استراتيجيات القراءة، بروتوكولات التفكير بصوت عال.

1. Introduction

Do all readers employ reading strategies? And why are some readers more successful than others? To answer these questions, researchers began to uncover what makes reading a successful activity. By taking into consideration the different reading strategies that can be used to comprehend a text and which are the most

commonly used by different readers for tackling different tasks [20], many researchers are seeking to find out about these strategies that will better help readers accomplish the task. e.g., [21,15]. Although questionnaires are the most popular method of learning about readers' preferred and employed techniques, their inability to recall tactics employed has been questioned [5,19].

For every reading task, do readers employ the proper strategies? Can they adapt their techniques if they are unable to understand reading tasks? And those who are not very good readers are they able to engage with the material and recognize appropriate reading techniques? According to [9, 18], verbal reports from students are the most dependable and straightforward method of determining the reading methods they employ. This is because students can express the strategies they use when reading aloud.

Researchers can employ the think-aloud technique to examine people's imperceptible cognitive processes. According to [20], researchers have emphasized the value of think-aloud techniques in collecting information about people's use of strategies. It has been said that proficient readers are able to adapt their reading techniques to the needs of the moment [5]. As noted by [1,2], if reading strategies are identified, we might be able to incorporate similar elements in other texts to assist readers in becoming more adept at applying strategies when reading.

Being able to recognize one's own thought processes, or metacognitive awareness, is an essential component of learning because it enables readers to navigate reading materials and find the best reading strategies based on task complexity and past knowledge. By using the think-aloud procedure, teachers can increase students' awareness of strategy use and help them comprehend the steps required in reading comprehension and so increase their understanding of using suitable tactics for particular reading assignments.

2. Background

2.1 Reading

For struggling readers, reading is an extremely challenging and time-consuming process that requires them to actively engage with the text at hand and establish a channel of interaction through which they can choose the best ways to understand the task's meaning and functions. English as a foreign language (EFL)' learners must be taught reading comprehension skills since they give them the tools, they need to complete the assignment.

2.2 The process of reading in a foreign language

According to [10, 8], readers apply their prior instruction to transfer the skill of comprehending reading texts in their first language to the second language, such as the EFL context. This means that they can use this skill when faced with texts in a second language.

2.3 Reading Comprehension

Understanding the written material is only one aspect of comprehension; there are other procedures or stages that the reader must do to completely get the meaning. "Comprehension is a complex set of processes that involves the encoding of facts, the activation of knowledge, and the generation of inferences to connect information in ways that make it understandable and memorable," according to [8,6], citing numerous researchers in support of their assertion. Therefore, reading comprehension is a process that considers the reader's past knowledge and understanding of the text.

For the learners to read a book and understand what the author is providing, they must use specific tactics or strategies that allow them to take control of the reading process and interact with the material they are reading. According to [7], "strategic competence" is mandatory because it entails the capacity to assess, arrange, and utilize strategies to understand the text under consideration.

For the reader to interact with the text and comprehend the author's aims, the cognitive awareness of the learner would also need to be activated. The reader's role is to recollect the "background knowledge"[1, 14, and 12]. Numerous academics have highlighted how "critical" reading comprehension is to students' efforts to understand texts and advance in their studies.

2.4 Think-aloud

To understand how useful, it is to use a think-aloud protocol when investigating reader's cognitive skills while trying to comprehend reading tasks. According to [4, 13], claim that think –aloud is a reading technique where readers can verbalize their thoughts while reading and therefore inform us about the strategies, they use to comprehend the text. When using this method, we can come across some reading comprehension strategies, such

as predicting and visualizing. To get a clearer picture of what goes on in the minds of both skilled and weak readers, this method is ideal for such a purpose.[4] illustrate how good readers accomplish the reading task interactively, employing and adapting different strategies for different tasks accordingly.

2.5 Prior knowledge

Readers integrate their previous knowledge, attitudes, and experiences towards reading with the strategies at hand as a model when asked to use the think-aloud method. Therefore, readers' knowledge accumulates. As the accumulation of new knowledge combines with previous knowledge, hence, readers will be able to utilize ways of interoperating and grasping the text. Furthermore, [4] state that if children know how to make connections between the text they are reading and the real world surrounding them, this would help them better understand the text. It is important for the learners to start to relate past experiences to reading tasks in order to derive meaning and context. And hence improve their reading comprehension.

2.6 Predicting

Readers employ the prediction technique by trying to guess while they are reading. [16] Claims that predicting is the skill of being able to guess about the rest of the text while reading. It is a way of inferring as readers integrate what is read with the rest of the guessed text to produce predictions. The readers continuously establish connections with the text through predictions and prior knowledge. This is a necessary skill for readers to have because they need to be able to connect prior knowledge to what comes next in the text. To be able to predict the reader, focus on the title and key words to derive inferences relating to the content or topic of the text. After that, the title will capture the attention of the reader and produce predictions regarding the content of the text. Readers can employ prediction to help them establish an idea about the meaning and content of the text as they read. Therefore, predicting is mandatory skill for reading comprehension tasks.

2.7 Visualizing

This strategy can enable readers to have pictures in their minds while reading. This, in turn, would help them easily understand the meaning of the text. [16] Claims that when readers employ this strategy, they are combining words in the text with previous knowledge to create images, which will help them construct the meaning of the text. Visualizing is a way of making inferences with mental images rather than words. When readers use the visualization technique, the reading process becomes easier as they are thinking based on inferences made while reading [3]. Once the text is simplified, this will keep the reader on track to comprehend the text. Visualization helps keep the reader motivated and continues to engage with the text.

3. Objective of the study

Many previous studies were carried out using the think-aloud protocol, looking into how successful readers and poor readers differ in their strategies for comprehending a text. Others, like [17], studied the differences between the reading processes of L1 and L2 to see if they were related to each other. This study explores the kinds of strategies used by students to answer a reading test by using the think-aloud protocol based on the O'Malley model of learning strategies. The objective is to find out what kind of effects the aloud protocol has on students' performance while taking the test and what strategies are most commonly used.

4. Method

Reading in a second language is problematic in nature as it requires the encoding of the text and students activate their cognitive skills in order to be able to comprehend the text. And also, the test questions increase the load on the students to comprehend and think for answers. Hence, the think-aloud protocol can be the best way for recording the students' verbal thoughts as they tackle the questions.

4.1 Participants

Two male and two female students were chosen for this investigation. The age range covered 35 to 40. These are EFL students from Libya who are enrolled in a PhD program in ELT in North Cyprus. Their proficiency in English varies from intermediate to advanced.

4.2 Instrumentation

A think-aloud protocol was employed so that the students use of strategies is verbally recorded. By using this technique, it is assumed that there will be no problem with students remembering their strategies. As they were asked to say and write whatever goes on in their minds. An academic IELTS reading test with questions was selected and distributed to the students. After that, the reports and recordings were contrasted. The reading text is shown in Figure 1.

4.3 Procedure

4.3.1 Data Collection

The data was gathered while the students were taking the test on an individual basis. The reading text was selected from sample IELTS reading tests. Instructions were given to each student to talk about whatever goes on in their minds. Interference was kept to a minimum, and students were not stressed by the presence of the researcher. The student's verbal thoughts were then recorded.

4.3.2 Data Analysis

After the data has been transcribed, it is then analyzed according to O'Malley model of learning strategies. Each utterance was matched to the identified strategies.

5. Results and Discussion

As mentioned before, the strategies employed by students were matched based on O'Malley model to find out strategies that were mostly favored by students during reading. Cognitive strategies are identified in Figure 2. It is clear in this figure that repetition was the highest in terms of frequent use (36%), followed by skimming and scanning, which accounted for 27%. Deduction was the lowest in terms of frequent use, amounting to 2%. Figure 3 shows the kinds of metacognitive strategies employed by the students in the experiment. The highest in terms of frequent use was confirmation of background knowledge, which amounted to 32%, followed by self-management, which amounted to 28%. The lowest in terms of frequent use was self-evaluation, which amounted to 16%. Figure 4 shows part of a verbal protocol made by one of the students during reading.

The sample size was so small; hence, the generalizability of the findings is limited. The presence of the researcher was also a limitation. In future studies, it is suggested that a large sample, a variety of instruments, and different cultures, disciplines, and text genres be considered for the results to be more reliable. This method is time-consuming as it requires a great deal of analysis, but it is still a valuable method and should be complemented by another method following the protocol, such as an interview with the students and allowing them to listen to the recorded material to confirm the results and also to let students know about their reading habits and their cognitive process of problem-solving behavior.

6. Conclusion

The results showed students use of different strategies. The verbal protocols gave a good indication of the thinking process students go through while attempting to read and answer questions related to the text. Teachers can make use of the findings. They can be aware of the kinds of strategies students employ more frequently in reading. The students were different in their selection of reading strategies, but some similarities were observed such as relying on their previous background knowledge (transfer), which was employed quite frequently. This points out the importance of this strategy in particular, as it was previously mentioned in the literature, and that it helps students visualize what they are reading, hence proving to be a valuable strategy. Some limitations were felt during the data collection and analysis stages, as well as some factors such as the sample size, the methodology, and the presence of the researcher. The method can be widely used by educators and teachers to study students reading habits and assess them by giving them pre-test sessions to equip them with the necessary skills and practice to go through the conscious process of answering test questions through the appropriate selection of reading strategy according to context, difficulty of text, individual differences, etc.

References

- [1] Alderson J. (1984). *Reading in a foreign language: A reading problem or a language problem?* In Alderson J., Urquhart A. (Eds.), *Reading in a foreign language* (pp.1–27). London: Longman.
- [2] Bakhshalinezhad & Nikou (2015) Using the Think-Aloud Technique for Determining Different Reading Strategies Used by Iranian EFL Learners, v.6n.3p.15
- [3] Block, Rodgers, & Johnson, (2004).]Prediction Wheel 1 ... predicting assist students in making meaning (Block, Rodgers, & Johnson, 2004).
- [4] Cardona & Maya(2011) READING IS THINKING: Improving Reading Comprehension Using the think-aloud Method.
- [5] Chamot, A.U. (2001). The role of learning strategies in second language acquisition. In M.P. Breen (Ed.), *Learner contributions to language learning: New directions in research* (pp. 25-43). Harlow, England: Longman.
- [6] Cohen, A. D. (2014). *Strategies in learning and using a second language*.

- [7] Ghafournia, Narjes; Afghari, Akbar(2013) Relationship between Reading Proficiency, Strategic Competence, and Reading Comprehension Test Performance: A Study of Iranian EFL Learners.
- [8] Gillam, Fargo & Robertson (2009), Comprehension of expository text: insights gained from think-aloud data.
- [9] Grenfell, M., & Harris, V. (1999). *Modern languages and learning strategies: In theory and practice*. London: Routledge.
- [10] Grabe, W. &Stoller, F. L. (2002) *Teaching and researching reading*, London: Pearson education.
- [11] Jones,Baumann, Kessell(2014). effect of think-aloud instruction on elementary students' comprehension monitoring abilities *Chandler, Arizona International Journal of Language Learning and Applied Linguistics World (IJLLALW) Volume 5 (1)*, 381-393.
- [12] Khatami, Heydariyan, and Bagheri, investigating the effect of think-aloud strategy on reading comprehension ability among EFL university students.
- [13] Madrid, D. (2000): "Learning Strategies", en *Teaching English as a Foreign Language*, Barcelona: The Australian Institute.
- [14] McClintock B, Pesco D, Martin-Chang S.Int J Lang Commun Disord. (2014)Thinking aloud: effects on text comprehension by children with specific language impairment and their peers. *49(6):637-48*.
- [15] Oxford, R.L., & Leaver, B.L. (1996). A synthesis of strategy instruction for language learners. In R.L. Oxford (Ed.), *Language learning strategies around the world: Cross-cultural perspectives* (pp. 227-246). Honolulu, HI: University of Hawaii Press.
- [16] Rog, L.J. (2001). *Early literacy instruction in kindergarten*. Newark, DE: International Reading Association. oote, Silvia Perpiñón, and Rakesh Bhatt, 199-209. Somerville, MA: Cascadilla Proceedings Project.
- [17] Seng (2007). the effects of think-aloud in a collaborative environment to improve comprehension of 12 texts *The Reading Matrix Vol. 7, No. 2*.
- [18] Shahrokh Jahandar, Morteza Khodabandehlou, Gohar Seyedi, Reza Mousavi Dolat Abadi(2012)The Think-aloud Method in EFL Reading Comprehension *International Journal of Scientific & Engineering Research Volume 3, Issue 9*.
- [19] Stephen B. Kucer - 2014 *Dimensions of Literacy: A Conceptual Base for Teaching Reading and Writing*.
- [20] Tabataba'ian & Zabihi (2011) Strategies Used by Four Iranian EFL learners in Reading ESP and GPE Texts: A Think-aloud Case Study, *World Journal of English Language*, vol.1, No.1.
- [21] Tarone, E. (1983). Some thoughts on the notion of "communication strategy." In C. Faerch & G.
- [22] Yoshida, Mami. 2008. Think-Aloud Protocols and Type of Reading Task: The Issue of Reactivity in L2 Reading Research. In *Selected Proceedings of the 2007 Second Language Research Forum*, ed. Melissa Bowles, Rebecca.

Appendixes

Figure 1. The reading texts

IELTS Academic Reading Passage Light Pollution <i>Light Pollution is a threat to Wildlife, Safety and the Starry Sky</i>	
A	<p>A After hours of driving south in the pitch-black darkness of the Nevada desert, a dome of hazy gold suddenly appears on the horizon. Soon, a road sign confirms the obvious: Las Vegas 30 miles. Looking skyward, you notice that the Big Dipper is harder to find than it was an hour ago.</p> <p>B Light pollution—the artificial light that illuminates more than its intended target area—has become a problem of increasing concern across the country over the past 15 years. In the suburbs, where over-lit shopping mall parking lots are the norm, only 200 of the Milky Way’s 2,500 stars are visible on a clear night. Even fewer can be seen from large cities. In almost every town, big and small, street lights beam just as much light up and out as they do down, illuminating much more than just the street. Almost 50 percent of the light emanating from street lamps misses its intended target, and billboards, shopping centres, private homes and skyscrapers are similarly over-illuminated.</p> <p>C America has become so bright that in a satellite image of the United States at night, the outline of the country is visible from its lights alone. The major cities are all there, in bright clusters: New York, Boston, Miami, Houston, Los Angeles, Seattle, Chicago, and, of course, Las Vegas. Mark Adams, superintendent of the McDonald Observatory in west Texas, says that the very fact that city lights are visible from on high is proof of their wastefulness. “When you’re up in an airplane, all that light you see on the ground from the city is wasted. It’s going up into the night sky. That’s why you can see it.”</p> <p>D But don’t we need all those lights to ensure our safety? The answer from light engineers, light pollution control advocates and astronomers is an emphatic “no.” Elizabeth Alvarez of the International Dark Sky Association (IDA), a non-profit organization in Tucson, Arizona, says that overly bright security lights can actually force neighbours to close the shutters, which means that if any criminal activity does occur on the street, no one will see it. And the old assumption that bright lights deter crime appears to have been a false one: A new Department of Justice report concludes that there is no documented correlation between the level of lighting and the level of crime in an area. And contrary to popular belief, more crimes occur in broad daylight than at night.</p> <p>E For drivers, light can actually create a safety hazard. Glaring lights can temporarily blind drivers, increasing the likelihood of an accident. To help prevent such accidents, some cities and states prohibit the use of lights that impair night-time vision. For instance, New Hampshire law forbids the use of “any light along a highway so positioned as to blind or dazzle the vision of travellers on the adjacent highway.”</p> <p>F Badly designed lighting can pose a threat to wildlife as well as people. Newly hatched turtles in Florida move toward beach lights instead of the more muted silver shimmer of the ocean. Migrating birds, confused by lights on skyscrapers, broadcast towers and lighthouses, are injured, sometimes fatally, after colliding with high, lighted structures. And light pollution harms air quality as well: Because most of the country’s power plants are still powered by fossil fuels, more light means more air pollution.</p> <p>G So what can be done? Tucson, Arizona is taking back the night. The city has one of the best lighting ordinances in the country, and, not coincidentally, the highest concentration of observatories in the world. Kitt Peak National Optical Astronomy Observatory has 24 telescopes aimed skyward around the city’s perimeter, and its cadre of astronomers needs a dark sky to work with.</p> <p>H For a while, that darkness was threatened. “We were totally losing the night sky,” Jim Singleton of Tucson’s Lighting Committee told Tulsa, Oklahoma’s KOTV last March. Now, after retrofitting inefficient mercury lighting with low-sodium lights that block light from “trespassing” into unwanted areas like bedroom windows, and by doing away with some unnecessary lights altogether, the city is softly glowing rather than brightly beaming. The same thing is happening in a handful of other states, including Texas, which just passed a light pollution bill last summer. “Astronomers can get what they need at the same time that citizens get what they need: safety, security and good visibility at night,” says McDonald Observatory’s Mark Adams, who provided testimony at the hearings for the bill.</p> <p>I And in the long run, everyone benefits from reduced energy costs. Wasted energy from inefficient lighting costs us between \$1 and \$2 billion a year, according to IDA. The city of</p>

San Diego, which installed new, high-efficiency street lights after passing a light pollution law in 1985, now saves about \$3 million a year in energy costs.

J Legislation isn't the only answer to light pollution problems. Brian Greer, Central Ohio representative for the Ohio Light Pollution Advisory Council, says that education is just as important, if not more so. "There are some special situations where regulation is the only fix," he says. "But the vast majority of bad lighting is simply the result of not knowing any better." Simple actions like replacing old bulbs and fixtures with more efficient and better-designed ones can make a big difference in preserving the night sky.

*The Big Dipper: a group of seven bright stars visible in the Northern Hemisphere.

Figure2. The uses of cognitive strategies

Cognitive Strategies	Frequency	Percentage
<i>Repetition</i>	20	36%
<i>Transfer</i>	8	14%
<i>Translation</i>	2	4%
<i>Inferencing</i>	3	5%
<i>Deduction</i>	1	2%
<i>Skipping</i>	7	13%
Skimming& Scanning.	15	27%
Total	56	100%

Figure3. The uses of Meta cognitive strategies

Metacognitive Strategies	Frequency	Percentage
<i>Self-Management</i>	7	28%
<i>Confirmation of Background Knowledge</i>	8	32%
<i>Self-Monitoring</i>	6	24%
<i>Self-Evaluation</i>	4	16%
<i>Total</i>	25	100%

Figure 4. Part of a protocol produced by one of the students while reading the text and the identified strategies

	Verbal Report	Identified Reading Strategy
1	<i>I should read the first one again.</i>	Sentence reprocessing
2	'Nevada desert' makes me think of American movies	Background knowledge activation

3	'Light pollution' makes me think of smoke pollution	Background knowledge activation
4	<i>The word 'illuminating' is very familiar, but ...</i>	Background knowledge activation/with failure at word level
5	I have never heard of retrofitting	Failure at word level
6	'Skyscrapers ' means high	Guessing word meaning
7	<i>I think I now understand what it says.</i>	Confirmation of sentence meaning
8	In Paragraph c 'bright' is used its usual meaning	Confirmation of sentence meaning