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The Effect of Using Station Rotation Model (SRM) on Enhancing EFL Secondary Stage Students' Reading Comprehension Skills

By

Ahmed Hussein Ahmed Eid Saleh

Supervised by

Prof. Aly A. Qoura **Prof. Asmaa Abdel-Monem Moustafa**

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Abstract

This research investigated the effectiveness of using SRM program to enhance second year secondary stage students' EFL reading comprehension skills. Participants of the research were two groups of second year secondary students (one experimental and one control) at Aliman School in Bahrain. Instruments of the study were an EFL reading comprehension test. The experimental group was taught based on the SRM program and the control group received regular instruction. The test was post - administered to both groups after the program has been applied. Results showed that the experimental group outperformed the control one. This indicated that the program was effective in developing EFL reading comprehension skills. Therefore, it is concluded that using SRM is effective in developing EFL reading comprehension skills.

Key words: Station Rotation Model- EFL Reading Comprehension Skills

Introduction

The current era, especially with the emergence of the Covid-19 epidemic, is characterized by rapid changes that make it necessary in the education system to cope with problems that may arise from them. Consequently, a large range of technology tools, such as e-learning, and hybrid learning (HL), have been established to enhance the communication of information as an important part of the learning environment. Learning English as a foreign language in Bahraini schools is a difficult process for students, particularly with reading comprehension skills which are affecting their learning and demotivating them to study English. Reading is the ability to comprehend the thoughts and feelings of others through written texts.

Theoretical background

Fortunately, new methods and tools have been introduced to help enhance students' reading comprehension skills such as SRM. It succeeds in education because it enables teachers to keep track of their students' progress as a group or individually, allowing for more effective student evaluation. The implementation of SRM demonstrates the benefits of teacher-led instruction and collaborative learning among students. While the

learners become energetic, thoughtful students, co-operation, engaged learning, and enhanced performance, the SRM includes teacher active intensification to application of technology in learning, particularly reading comprehension, development of effective communication skills, and content distribution in experiencing the fulfilment of classroom processes and experiences (Johnson, 2013).

Reading comprehension:

In today's information-driven world, reading comprehension is essential for success in academics, professional life, and personal growth. It involves a sophisticated cognitive ability to understand and interpret text, including decoding words, grasping vocabulary, and recognizing sentence structures. Beyond basic decoding, reading comprehension requires active cognitive processes like making inferences, drawing connections, and engaging with the text's explicit and implicit content. Villafuerte & Pacheco (2023) describe reading comprehension as the integration of text with prior knowledge and experiences, a process that enhances both language skills and a love for reading.

To improve reading comprehension, educators employ various approaches. Brown & Day (2019) discuss four key methods: the Interactive Approach, which engages readers with pre-reading and post-reading activities to foster critical thinking; the Metacognitive Approach, which teaches self-monitoring strategies to improve comprehension; the Cooperative Learning Approach, which uses peer interaction to enhance understanding; and the Content-Based Approach, which integrates reading with subject-specific content to deepen comprehension.

Understanding the reading process is also crucial. The Bottom-Up Model, as Shahnazari and Dabaghi (2014) explain, focuses on recognizing the smallest units of text, but is often considered less effective. The Top-Down Model, emphasized by Gilani, Ismail, & Gilakjani (2012), relies on prior knowledge to make predictions and interpret text meaningfully. The Interactive Model combines these approaches, recognizing the dynamic interaction between the reader's knowledge and the text, which enables better comprehension through the integration of cognitive processes like semantics, syntax, and background knowledge.

Different types of reading are vital in optimizing learning, especially in foreign language instruction. Caldwell and Leslie (2010) categorize reading into narrative comprehension, which involves understanding stories, and informative comprehension, which focuses on knowledge-rich texts. Reading strategies have evolved to include intensive and extensive reading.

Intensive reading, as Yang, Dai, & Gao (2012) describe, is classroom-focused and helps build comprehension through challenging texts. Extensive reading, according to Al Udaini (2011), is leisurely and enhances language skills and knowledge through diverse materials. Other reading types include speed reading for efficiency, silent reading for comprehension, critical reading for analysis, and loud reading for pronunciation and comprehension (Garcia, Melero, & Izquierdo, 2014).

Reading comprehension involves mastering various components and skills essential for understanding texts. Paris and Hamilton (2014) highlight decoding, fluency, vocabulary, reasoning, and background knowledge as key elements in the reading process. Phonemic awareness, phonics, and comprehension are foundational skills that enhance reading proficiency (Meniado, 2016). Additionally, strategies like skimming, scanning, inference, and prediction are crucial for identifying main ideas, extracting details, and anticipating content (Bechlem & Derouaz, 2017). Sequencing, summarizing, and distinguishing facts from opinions further develop critical thinking and comprehension (Amin, 2019). By mastering these skills, readers can analyze text structure, assess credibility, and make contextual predictions, which not only enhances understanding but also enriches the overall reading experience, allowing readers to gain valuable insights and knowledge.

Station Rotation Model

The Station Rotation Model (SRM) is a hybrid learning approach that involves dividing students into smaller groups and rotating them through various learning stations, each offering distinct activities to cater to diverse learning styles. This model, as Lim & Kim (2018) describe, personalizes instruction, addressing individual learning needs and fostering an inclusive learning environment. SRM blends traditional classroom teaching with online learning, incorporating fixed stations for teacher-led instruction, independent learning, and technology-based activities. The integration of technology in SRM enhances student engagement, personalizing the learning experience and allowing teachers to provide individualized support.

The theoretical foundation of SRM is rooted in several educational theories, including social-constructivism, Vygotsky's learning theory, cognitivism, and connectivism. These theories emphasize the social nature of learning, the importance of processing information for cognitive development, and the role of technology in modern education. According to

Cahill (2020), SRM incorporates these theories to create a more adaptive and engaging learning experience tailored to each student's unique needs.

The SRM offers numerous benefits, including increased student engagement, improved academic achievement, and flexibility in learning. It promotes active learning, critical thinking, and collaboration among students, particularly in STEM subjects. The model's integration of technology creates an interactive learning environment, making abstract concepts more relatable. However, SRM also faces challenges, such as reduced teacher-student interaction, the need for significant resources, and the potential for student disengagement due to the model's emphasis on self-directed learning (Crouse & Maushak, 2019). Implementing SRM requires comprehensive teacher training, adequate resources, and careful consideration of student preparation.

Assessing the effectiveness of SRM is crucial for its successful implementation. Various evaluation strategies, including quantitative measures, classroom observations, formative assessments, and qualitative research, are employed to gauge student engagement, academic progress, and the overall impact of SRM. These assessments help educators refine and optimize the model for improved learning outcomes (Tucker, 2019). Studies have shown that SRM can significantly enhance educational outcomes, but its success depends on overcoming the challenges related to resource availability, teacher training, and student preparation.

Background of the problem

This research's problem is that secondary stage students in Bahrain have poor reading comprehension skills. Thus, this research is an attempt to enhance EFL reading comprehension skills through station rotation model.

The researcher conducted a pilot study to assess the current level of EFL reading comprehension skills among second-year secondary students. A randomly selected sample from Aliman Private School was examined during the first term of 2023 to evaluate their proficiency in reading comprehension. The primary objective of the pilot study was to gain insights into the instructional methods used for teaching English reading comprehension skills, as well as to understand the perspectives and attitudes of both teachers and students towards these instructional practices. To achieve the study's objectives, a reading comprehension test was administered. The test items were systematically presented and categorized in alignment with the specific purposes of the study.

Table 1
Pilot Study Reading Skills' Test Results

	N	Mean	Std. Deviation	%
Skimming (reading for overall understanding)	25	.8000	1.00525	40
Scanning (reading for specific information)	25	1.0000	1.02598	50
Differentiating between facts and opinions	25	1.0000	1.02598	50
Summarizing a reading text	25	1.2000	1.00525	60
Guessing the meaning of words through context	25	.6000	.94032	30
Inferring the meaning from the context.	25	.9500	.99868	47.5
Identifying the sequence of ideas and events	25	1.3000	1.12858	65
Understanding Cause and effect relationships	25	1.4000	1.04630	70
Total	25			58.9

Results in table (1) indicate that the participants' total mean score on the reading comprehension test was low. This means that the students had difficulties in reading comprehension skills.

Statement of the problem:

Based on a literature review, pilot study results, and the researcher's 20 years of experience as an EFL teacher, it was found that students struggle with key reading comprehension skills such as guessing word meanings from context, skimming, inferring, scanning, distinguishing facts from opinions, and summarizing. These issues appear to negatively impact students' motivation towards reading. Consequently, the researcher recommends implementing SRM model to enhance students' reading comprehension skills.

Questions

The research seeks to answer the following main question that was derived in view of the literature review and the theory of hybrid learning:

What is the effectiveness of using SRM in improving the Bahraini EFL secondary stage students' reading comprehension skills?

This main question elicits the answer to the following sub-questions:

- What are the reading comprehension skills necessary for EFL secondary stage students?

- What are the features of a proposed treatment based on SRM to improve reading comprehension skills?
- What is the effectiveness of using SRM in improving the reading comprehension skills for EFL secondary stage students?

Purpose:

The purpose of this research is to determine the impact of using station rotation model program to develop secondary stage students' reading comprehension skills.

Significance:

The goal of the study is to create a hybrid learning environment that includes collaborative activities as well as differentiated instruction.

Given the preceding considerations, it is intended that the current investigation will:

- **For students**: The study underlines the value of taking a critical approach to learning. The students will be exposed to a variety of resources, which they must evaluate and use.
- **For instructors**: The suggested model and activities can be used to help instructors enhance the language performance of their students.
- **For Curriculum Developers**: When creating activities or assignments for students, they can consider the findings of the research.
- **Researchers:** This study motivates researchers to seek out, create, and use cutting-edge learning methodologies, particularly in light of the Covid-19 pandemic and its significant impact on the learning process

Delimitations: -

This research was delimited to:

-Participants: A group of EFL 50 students enrolled in Aliman Private School in Bahrain.

- Place: Aliman Private School in Bahrain.

-Time: The first semester of the school year 2023

-Skills:

The following reading skills; skimming, scanning, inferring the meaning from the context, referencing, differentiating between facts and opinions, and summarizing a reading text.

Hypotheses:

The following hypotheses are made in terms of the research questions:

- There is a statistically significant difference at the 0.05 level between the mean score of the experimental group and the control group on the EFL reading comprehension skills posttest in favor of the experimental group.

- There is a statistically significant difference at the 0.05 level between the mean score of the experimental group in the pre- and post-administration of the reading comprehension pre/posttest in favor of the post administration.

Methodology Participants:

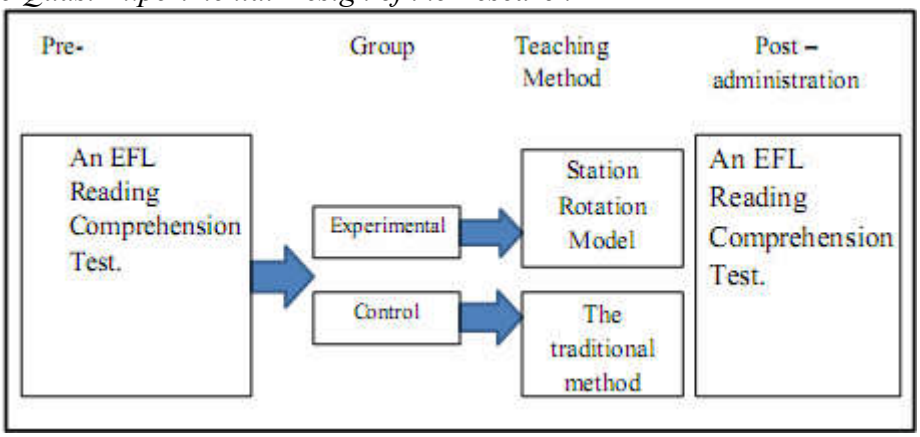
A group of EFL second year secondary stage students (N=50). They were randomly selected from Aliman Private School in Bahrain. Those participants were divided into two groups: the experimental group and the control group.

Design:

The current research adopted the quasi-experimental design in terms of dividing the sample into two groups (experimental and control) that aimed to investigate the impact of using a station rotation model program on developing EFL reading comprehension skills of second year secondary stage students. The experimental group was trained using the station rotation model program while the control group was taught using the traditional method. A pre-post reading comprehension test was conducted to assess their reading comprehension skills. The pre-post EFL reading comprehension test was administered to both groups before and after the program. The results of the pre-post EFL reading comprehension test were analyzed by using t- test for independent samples. This was to find out whether there was any significant difference between the mean score of the two groups after the implementation of the program. Figure (1) illustrates the quasi-experimental design of the research.

Figure 1

The Quasi-Experimental Design of the Research



Instrument:

For the purpose of the research, the following instrument was designed:

- An EFL Reading Comprehension Skills test (pre-post) for assessing EFL second year secondary stage students' reading comprehension skills.

Definition of Terms:

Reading comprehension:

Reading comprehension is the process of constructing sense through communicating with the text through the combination of many elements like text content, prior knowledge, and previous experience. (Brassell & Rasinski, 2008). According to Bolain (2008), "reading is a subtle and complex process involving sensation, perception, understanding, application, and integration. It is the magic key to the world of enlightenment and enjoyment and is the basic tool for learning in all subject areas." (p.2). Alkhateeb, Hayashi, Rajab & Hirashima (2015) explained that reading comprehension is a complex process in which the readers use their ability to find information. It means that the readers must be able to comprehend the meaning of printed words from what they read.

In this study, reading comprehension is operationally defined as the students' ability to simultaneously extract and construct meaning through interaction and involvement with written language and the ability to process a text, understand its meaning, and to integrate with their prior knowledge.

Station Rotation Model

According to Christensen Institute (2013), SRM is "one in which within a given course or subject, students rotate on a fixed schedule or at the teacher's direction between learning modalities, at least one of which is online learning" (P. 26). A SRM includes "fixed schedules in which all students rotate to all learning stations" (Maxwell & White, 2017, p. 4). Thus, in the current study, the SRM is a learning setting where students rotate among an online station, teacher-led station, and collaborative station under the teacher directions.

Statistical Analysis and Results

Testing the first hypothesis of the research:

The first hypothesis stated "There is a statistically significant difference at the 0.05 level between the experimental group and the control group in the mean score of the reading comprehension skills test in favor of the experimental group". To verify this hypothesis, t- test for independent samples was used to compare the mean scores of the two groups.

Results are presented in table (2):

Table 2

Comparing the Performance of the Control and the Experimental Group on the Post Administration of the Reading Comprehension Skills Test

Skills	***Group***	***N***	***Mean***	***SD***	***T***	***Df* (n1+n2-2)**	***Sig. (2-tailed)***
Total	Exp.	25	44.8800	3.16649	5.73	48	Significant at 0.05
	Cont	25	37.6000	5.50757			

Note: Significant at 0.05 level

Table 2 shows that the mean scores of the experimental group in the reading comprehension skills (skimming, scanning, referencing, inferring, differentiating between facts and opinions, and summarizing) and in the total were higher than those of the control group. The table illustrates also that the estimated t-value (5.73) is significant at 0.05 level and degree of freedom was 48. This indicates that there are statistically significant differences between the experimental and control groups in all the reading comprehension skills and in the total score on the post-administration of the test. These significant differences are in favor of the experimental group. In other words, the experimental group outperformed the control group in their EFL reading comprehension skills. These results confirm the validity of the first hypothesis. The researcher attributes these results to the effects of SRM program.

Testing the second hypothesis of the research:

The second hypothesis stated that ""There is a statistically significant difference at the 0.05 level between the mean scores of the experimental group on the pre-and post-administration of the reading comprehension skills test in favor of the post administration".

In order to test this hypothesis, a t-test for dependent samples was used. Table 3 shows the results.

Table 3

Comparing the Performance of the Experimental Group on the Pre and Post Administrations of the Reading Comprehension Skills Test

skills	***Measurement***	***N***	***Mean***	***SD***	***T***	***D. f (n-1)***	***Sig. (2-tailed)***
Total	Pre	25	35.7200	4.92037	15.3	24	Sig.
	Post	25	44.8800	3.16649			

Note: Significant at 0.05 level

The results in the above table illustrate that the estimated t-value (15.3) is significant at 0.05 level and degree of freedom was 24. This reflects that there are statistically significant differences between the mean scores of the pre-post-administration of the reading comprehension skills

test in in the six reading comprehension skills investigated (skimming, scanning, referencing, inferring, differentiating between facts and opinions, and summarizing) and in the total score. These significant differences are in favor of the post-administration. The researcher attributes these results to the effect of the SRM program.

Table 4 illustrates the effect size of the proposed SRM program concerning the difference between the pre- and post-administration of the reading comprehension skills test on the experimental group.

Table 4

Value of (η2) and Levels of Effect Size of the Experimental Group on the Pre and Post Administrations of the Reading Comprehension Skills Test

skills	***T***	***D. f (n-1)***	***Value of Eta –square (η2)****	***Level of effect size***
Total	15.3	24	0.91	high

Table 4 illustrates the effect size of the proposed program on the academic achievement of the experimental group students in the six reading comprehension skills investigated (skimming, scanning, referencing, inferring, differentiating between facts and opinions, and summarizing). Results indicated that the effect size is high in the six reading comprehension skills investigated. This difference between the pre- posttest reveals that 95% of the total variance of the overall EFL reading achievement can be attributed to the independent variable (the proposed SRM program).

Results in tables 3 & 4 prove that the statistical differences between the pre- post administration of EFL reading comprehension skills test are in favor of the post-administration. In addition, the size of these differences fosters the positive effect of the program on students' achievement. Therefore, the first hypothesis of the study is proved and accepted.

The increase in the students' level in reading comprehension skills after applying the SRM program was due to using various stages and stations of the program as means for practicing reading comprehension skills such as activities that promote critical thinking and interactive discussion. Most of the students liked SRM activities because they helped them sharpen their thinking, work together, and gave them the chance to be self-dependent learners. In addition, many students reported that the SRM activities were much fun.

Discussion and results

The research's findings revealed a statistically significant difference between the two groups under investigation, favoring the experimental group. Specifically, the experimental group demonstrated improved reading comprehension skills following the post-administration of tests. This improvement can be attributed to the impact of the experimental treatment, which utilized the suggested program based on SRM.

The success of the program may be linked to the specific activities included, which encouraged participants to engage with and communicate using targeted skills. These activities facilitated authentic interactions in reading and writing, allowing students to express themselves and practice English language competencies. Remarkably, the innovative teaching approach employing SRM for teaching EFL reading to second-year secondary stage students resulted in enhanced reading comprehension skills.

The use of SRM fostered enthusiasm among students, particularly due to its alignment with their interests and the stress-free learning environment it provided. Collaborative group work within the SRM program allowed students to accomplish tasks, access essential materials (such as PowerPoints, worksheets, and videos), and progress smoothly through different stages. Importantly, during training sessions, students felt empowered to make mistakes and self-correct without fear of negative feedback, actively participating in discussions and contributing to the learning process.

Comparing the experimental group to the control group, which adhered to traditional teaching methods, the former achieved higher proficiency in EFL reading comprehension skills. Although both approaches were effective, SRM proved more impactful.

In summary, students who participated in the SRM program demonstrated improved EFL reading comprehension skills. Additionally, their familiarity with modern technology, including the SRM program, increased. English sessions conducted using SRM were well-received by students, emphasizing the program's positive impact.

The results of the present research are compatible with the results of the research conducted by Sands (2017) which emphasized that the station rotation model improves flexibility and customization, making learning enjoyable and engaging. Students benefit from exposure to different instructional approaches, such as collaborative discussions, independent reading, and interactive writing activities. As they move through stations, they develop critical literacy skills, including comprehension, vocabulary

acquisition, and fluency. The SRM's adaptability ensures that students receive targeted support based on their individual needs, fostering growth in reading competencies .

Conclusions:

Based on the analysis and results, it can be concluded that the SRM program significantly improved EFL reading comprehension skills. The success of the SRM program was attributed not only to the program's design but also to the positive learning environment, autonomous learning strategies, and a learner-centered approach. The diverse exercises, resources, and learning stations provided ample practice, while collaborative activities and communicative pair and group work were highly effective.

Hybrid learning models, particularly SRM, offer a valuable approach for engaging students, reducing classroom boredom, and fostering a stress-free learning environment. These models encourage teamwork, rewards, competition, and motivation, leading to skill development and enjoyment in learning.

Recommendations:

Based on the study's findings, the following recommendations are proposed for teachers, students, course designers, and EFL researchers:

For EFL Teachers:

- Ministries of Education should train EFL teachers in technological approaches, especially hybrid learning, to enhance students' reading skills.
- Teachers should encourage the use of classroom resources to create an enjoyable learning environment.
- Incorporating hybrid learning models, such as SRM, should be prioritized.
- Teachers should foster active participation in interactive tasks and activities.
- Pre-service and ongoing professional development programs should include training on teaching reading skills.
- Emphasizing technology use in classrooms should be a top priority.

For EFL Students:

- Students should focus on developing their reading comprehension skills during their secondary stage.
- Students should embrace enjoyable learning strategies and be active participants in communicative-oriented classes.
- Utilizing available technology for language learning is crucial.
- Schools should be equipped with the latest technological facilities to

support the teaching-learning process.

For EFL Course Designers:

- SRM should be included in EFL course development, particularly at the secondary school level.
- New techniques, methods, and strategies for improving reading skills should be explored and implemented.
- The use of technology, especially SRM, should be emphasized due to its proven effectiveness.

For EFL Researchers:

- Researchers should build on the insights of this study to apply SRM in other areas of English language teaching and to improve various student attitudes.
- Investigating different trends in technology and innovative teaching methods to enhance reading skills is recommended.

Suggestions for Further Research:

The following areas are suggested for further research:

- Conduct a follow-up study to assess SRM's influence on other language skills (listening and speaking).
- Apply SRM and hybrid learning programs at different educational stages (i.e., primary and preparatory).
- Replicate the experimental treatment with larger sample sizes.

References

Al Udaini, A. A. (2011). The effect of a computerized program on developing 9th graders' reading comprehension skills and their attitudes towards reading in Palestine. The Islamic University, Gaza.

Alkhateeb, H., Hayashi, Y., Rajab, T., & Hirashima, T. (2015). The impact of reading strategies on reading comprehension. Journal of Educational Research, 13(2), 45-58.

Amin, M. (2019). Developing reading skills through effective reading approaches. International Journal of Social Science and Humanities, 4(1), 35-40.

Bechlem, Z., & Derouaz, L. (2017). The Role (s) of Skimming and Scanning in Enhancing Students' Written Retelling: The Case of Intermediate and Upper Intermediate Learners of English at the Centre d'Enseignement Intensif des Langues, Jijel (Doctoral dissertation).

Brassell, D., & Rasinski, T. (2008). Comprehension that works: Taking students beyond ordinary understanding to deep comprehension. Huntington Beach, CA: Shell Education.

Brown, H. D., & Day, R. (2019). Teaching by principles: An interactive approach to language pedagogy. Pearson.

Cahill, J. (2020). Station Rotation Model. EdTech Magazine. Retrieved from

Caldwell, J., & Leslie, L. (2010). Thinking aloud in expository text: Processes and outcomes. Journal of Literacy Research, 42(3), 308-340.

Christensen Institute. (2013). Blended learning: A disruptive innovation. Christensen Institute. Retrieved from https://www.christenseninstitute.org/publications/blended-learning/

Crouse, J., & Maushak, N. J. (2019). Station Rotation Model: The Effects on Student Motivation. Journal of Education and Practice, 10(6), 78-94.

Garcia, M. T., Melero, M. A., & Izquierdo, J. M. (2014). The role of reading aloud in English teaching and learning. Journal of Language Teaching and Research, 5(3), 637-644.

Gilani, M., Ismail, H. N., & Gilakjani, A. P. (2012). Impacts of learning reading strategy on students' reading comprehension proficiency. The international journal of language learning and applied linguistics world, 1(1), 78-95.

Johnson, R. T. (2013). The benefits of SRM in classroom instruction. Educational Leadership, 71(4), 22–27.

Lim, H. J., & Kim, J. (2018). Effects of the station rotation model on developing EFL students' reading skills. English Teaching, 73(4), 221-242.

Maxwell, J. A., & White, R. (2017). Blended learning for inclusive and quality education. UNESCO Institute for Information Technologies in Education. Retrieved from http://iite.unesco.org/publications/blended-learning-for-inclusive-and-quality-education/

Meniado, J. C. (2016). Metacognitive Reading Strategies, Motivation, and Reading Comprehension Performance of Saudi EFL Students. *English Language Teaching*, *9*(3), 117-129.

Paris, S. G., & Hamilton, E. E. (2014). The development of children's reading comprehension. In Handbook of research on reading comprehension (pp. 56-77). Routledge.

Sands, B. (2017). Why you should use a rotation model in your classroom. Retrieved from: *https://study.com/blog/why-you-should-use-a-rotation-model-in-your-classroom.html*

Shahnazari, M. T., & Dabaghi, A. (2014). A critical overview of models of reading comprehension with a focus on cognitive aspects. *Research in English Language Pedagogy*, *2*(1), 7-19.

Tucker, B. (2019). The flipped classroom model of blended learning. Handbook of Research on Blended Learning Pedagogies and Professional Development in Higher Education.

Villafuerte, Jhonny & Pacheco, Erick. (2023). Reading-Comprehension-and-Academic-Writing.

Yang, W., Dai, W., & Gao, L. (2012). Intensive reading and necessity to integrate learning strategies instruction. *English language and literature studies*, *2*(1), 112.