Exploring the Effectiveness of Pre- and Post-Reading Activities on the Development of Reading Motivation and Self-Regulation as Essentials for Reading Comprehension

Parviz Ajideh [1], **Mohammad Zohrabi** [2], **Behnaz Khojand** [3*]

[1, 2, 3] English Department of Persian Literature and Foreign Languages, University of Tabriz, Tabriz, Iran, alireza004616@gmail.com, bmallamiri@gmail.com, nshangarf@yahoo.com.

Article info	Abstract
	Abstract Reading skill entails the employment of specific skills and strategies. The use of post-reading and pre-reading activities, considering the importance of individual differences of the learners, have been reported to be successful techniques in enhancing reading comprehension. Thus, the objective of the current study is to scrutinize the influence of pre-and post-reading activities in developing EFL learners' reading motivation, self-regulation, and reading comprehension. The participants were 111 male and female B.A. students at the intermediate proficiency level selected through a random sampling method. The instruments included the Motivation for Reading Questionnaire by Mori (2002) and the Self-Regulation Questionnaire by Brown et al., (1999). Reading comprehension was assessed founded on the learners' scores in the reading section of PET. The collected data was analyzed by ANCOVA. The findings revealed that pre-reading and post-reading activities were effective in improving learners' self-regulation, reading motivation, and reading comprehension. Additionally, it can be claimed that the effectiveness of pre-reading and post-reading activities in developing self-regulation and reading motivation can ultimately enhance learners' reading comprehension. The outcomes of the study could be beneficial for EFL learners and teachers. ***Keywords:*** Pre-Reading and Post-Reading Activities, Reading Comprehension, Reading Motivation, Self-Regulation

1. Introduction

The ability of reading comprehension has been regarded as an essential element in academic contexts, which can determine successful language learning (Dobakhti et al., 2020). To enable the learners to become competent readers, EFL teachers need to understand the rudimentary concepts of reading comprehension, and individual differences of the learners and make use of different task types to improve this skill. According to Marzban Qadikolaei and Mansouri Qadikolaei (2023), individual differences and their probable roles in the language teaching and learning process justify great consideration. Understanding EFL learners' personality traits and cognitive styles is essential for teachers in different educational settings since it aids them discover suitable instructional techniques.

Using appropriate and applicable tasks that suits learners' proficiency level and interest before and after the reading stage can increase learners' ability to comprehend the text. This will ultimately develop learners' interest and motivation in reading since knowledge of vocabulary, grammar, and content of the reading shared by the learners before starting to read the text and practicing the taught points after reading can equip learners to be competent to read future texts with more confidence and knowledge (Kern, 2003). Using specific activities and tasks to increase learners' level of comprehension during reading can also be effective in evolving active readers who employ constructive processes to comprehend the content. This will additionally provide learners with the ability to set aims for the way they learn and endeavor to regulate, observe, and direct their motivation, cognition, learning, and conduct, directed and restricted by their objectives and situational elements. Moreover, according to Dobakhti et al. (2022), it is an undeniable fact that learners' affective and psychological status is as important as their cognitive state (Zohrabi & Shokrzadeh, 2017). These elements as declared by Zhang (2022) are determining factors in enhancing learners' language performance, which can act as encouraging or inhibiting causes.

Evidence has shown that much effort has been put into teaching English language as a foreign language in Iran; however, EFL learners still undergo several complications in language learning skills (Kamgar & Jadidi, 2016). As language learning is a long-term commitment, language learners are required to be motivated enough to follow this exertion (Ghelichli et al., 2022). Thus, it can be argued that the major problem that this study is interested in is the fact that despite spending numerous hours in language classes and studying several different course books, most of the learners, even the ones labeled as advanced proficiency level learners, are still not able to comprehend the texts accurately and effortlessly, which might be related to their lack of motivation to read and regulate and monitor their learning process. Learners who are unable to comprehend a text, frequently lose their motivation and interest in reading new

texts, and they lack enough knowledge to regulate their learning process and react effectively when facing misunderstandings and learning difficulties. Hence, there need to be some procedures, preliminary personal and psychological foundations, and certain activities to improve their reading performance. Providing tangible conditions for boosting the emotional and cognitive abilities of the learners via different learning strategies and reading activities can facilitate this process.

Reviewing the related literature revealed that numerous studies examined the role of different task types in different reading phases in developing learners' reading comprehension and studies that inspected reading motivation and self-regulation, separately (e.g., Alghonaim, 2020; Hemmati et al., 2019; Maftoon & Tasnimi, 2014; Nemati Moghaddam & Mahmoudi, 2016; Toprak & Almacıoglu, 2009). However, there is a scarcity of research investigating the consequence of post-reading and pre-reading activities on the enhancement of EFL learners' self-regulation, motivation for reading, and reading comprehension in EFL classes.

Moreover, few studies have considered the determining effect of reading activities in developing learners' self-regulation, reading motivation, and reading activities. Self-regulation and motivation, as stated by Zumbrunn et al., (2011), are the concepts that have a reciprocal relationship in the learning process, where they both predict and influence each other. For example, improving self-regulation in first language (L1) reading comprehension has been shown to enhance motivation for reading in L1. (e.g., Stoeger & Ziegler, 2008; Swalander & Taube, 2007; Vidal-Abarca et al., 2010). Nevertheless, the studies directed at self-regulation related to EFL reading (e.g., Koehler, 2007; Mbato, 2013) have not considered motivation for EFL reading and activities in the pre-and post-reading phases. Additionally, very scarce studies on the function of self-regulation concept in EFL reading motivation (Ammar, 2009; Ferreira & Simao, 2012) have been conducted. Thus, the main purpose of this study is to initially scrutinize the effectiveness of two individual differences including self-regulation and reading motivation in the development of reading comprehension grounded on the reviewed literature and then accordingly employ certain activities and examine the role of pre-and post-reading activities in developing EFL learners' reading motivation, self-regulation, and reading comprehension.

2. Literature Review

2.1. Comprehension in Reading Skill and Cognitive Involvement of the Readers

Conventionally, as claimed by Gough (1972), reading skill is viewed as a linear procedure consisting of a one-way decoding process of thoughts and information from the writer to the reader. He adds that this process involves

the reader struggling to make meaning out of the printed codes and visuals concealed in the form of the messages in the manuscript, which might have no reference to the background knowledge of the reader. Meaning construction is a crucial process and factor in modern descriptions of reading skills. In this regard, Day and Bamford (2000) considered reading skills as the meaning construction resulting from a written communication form. In EFL contexts, the teacher directs meaning construction. Reading capability requires you to interact with what you read (Zohrabi & Radkhah, 2019). It is the construction of meaning and sense by the interface that occurs amid the information specified or implied in the script, the reader's preceding acquaintance, and the context of the reading situation. Contrary to the traditional views, the reader, here, construes and makes sense of the written text based on their experiences and mentality that could be dissimilar from the ones related to the writer. This point verifies that reading ability is equally an active and explanatory procedure. Reading encompasses a synchronization of lower-level practices like applying knowledge of words, syntax along with discourse features, and word recognition; and higher-level practices like interpretation, comprehension checking, inferencing, and critical evaluation (Grabe, 2009).

According to Alfallaj (2011), the concept of comprehension is viewed as the core of reading since it is responsible for the procedure that cares for operative meaning drawing out from a written text. He adds that contemporary literacy principles necessitate learners' ability to self-manage, self-modify, and self-monitor the reading process as a means to turn into strategic readers who are able to choose information from the written content and cultivate logical and critical reflection on the writing during reading. Here, the learners are expected to be equipped with a broad variety of writing and reading activities, which consist of efficient reading comprehension practices.

2.2. The Intervention of Different Types of Reading Activities

Williams (1987) provided a three-phase approach to reading comprising while-reading, pre-reading, and post-reading stages, and paid distinctive consideration to the first phase which is the pre-reading phase. This procedure is initiated by presenting the subject of the reading text. Later, learners are assumed to try in groups and create a list designed in two columns. Specifically, the first column includes points about the subject that they previously knew, and the second contains the points that they are not assured of or do not even know.

2.2.1. The Techniques of Pre-Reading

Formerly, in the overall teaching of reading practice, as Chandavimol (1998) specified, the learners were allocated to read a reading activity and do the post-reading exercises by themselves. In this kind of reading task, the

teacher did not offer any activities that might awaken the reader to realize an operative comprehension. Ajideh (2006) held that activities in the pre-reading phase are advantageous to the reader since they build new schemata, activate the existing schemata, and inform the teacher about the things that the learners recognize. Pre-task processing has been suggested to be influential in preparing learners for better performance, as it involves cognitive processing of the material in advance (Ansarin & Javadi, 2018). According to Colorado (2007), having knowledge of the subject is essential for learners prior to the reading. In addition to the syntactic and semantic knowledge, the learner must know something regarding the text with the intention of understanding it well. Pre-reading activities affect reading comprehension since they inform and stimulate learners before reading (Zohrabi & Jafari, 2020).

2.2.2. The Techniques of Post-Reading

Yokubjonova et al. (2022) claimed that reading skills are essentially one of the most problematic features of language skills to obtain. This skill needs several abilities. It is hugely suggested to divide reading into small steps, where learners can learn step-by-step. Consequently, most lesson plans related to reading skills include pre-, while-, and post-reading activities, to make learning more effortless and organized, and easier. Considering the role of post-reading activities, they claimed that, undoubtedly, they have an essential role in the learning procedure. In the absence of them, the reading lesson remains incomplete or partially completed. Thus, it is essential also to include post-reading activities in the reading process (Farrokhi et al., 2018).

To have a better and higher comprehension of a passage, it is significant to engage entirely before, during, and after reading. Post-reading strategies aid readers in checking for understanding, summarizing their learning, and consolidating their judgments and thoughts. EFL learners must similarly take part in post-reading strategies; nonetheless, the content must be made more comprehensible for them as well. (Mills, 2022).

2.3. Reading Motivation in Foreign Language Learning

Wigfield and Guthrie (2000) concentrated on reading motivation and they were the first scholars who studied reading motivation among children. They investigated how the children's motivation is associated with the breadth and amount of their L1 reading. The reading motives, like intrinsic-extrinsic motivation, self-efficacy beliefs, aims for learning, and social features of motivation, are evaluated by a reading motivation questionnaire. According to Wigfield and Guthrie (2000), the breadth and amount of reading were influenced more significantly by intrinsic motivation rather than extrinsic motivation.

Investigation of L2 reading motivation concept is comparatively recent progress in comparison to L1 research (Komiyama, 2013). In contrast to L2 learning motivation studies that have been directed by numerous theoretical models based on L2 (e.g., Csizer & Dornyei, 2005; Dornyei, 2009; Gardner & MacIntyre, 1993), there seems a clear model based on L2 in reading motivation studies is missing. The majority of studies aiming to uncover the fundamental factors influencing motivation of second language reading have developed in Asia (e.g., Dhanapala & Hirakawa, 2016; Komiyama, 2013; Mori, 2002. Takase, 2007). Mori (2002) made one sample of the first efforts to recognize the fundamental construction of motivation in reading. There are four principal elements in the reading motivation related to the EFL learners in Japan, including intrinsic significance of reading, importance of reading skill, extrinsic usefulness worth of reading, and efficacy for reading.

Dhanapala and Hirakawa (2016) discovered that sub-components of intrinsic motivation are curiosity, struggle for reading skill, involvement, constructive behavior of reading ability, and usefulness worth of reading skill, while sub-components of extrinsic motivation are social sharing, recognition, and grades. On the other hand, Komiyama (2013) created a model of L2 reading motivation with five factors, having merely four extrinsic sub-factors and one intrinsic factor, which are academic and test compliance, drive to excel, and social sharing.

2.4. Self-Regulation Theory in Learning and Reading

Self-regulation which is a psychological conception that has garnered significant interest from numerous researchers in the field of education like Zimmerman (1990), denotes self-generated contemplations, outlooks, and behavior that are prearranged and regularly modified based on the performance feedback to accomplish self-set objectives (Zimmerman, 1989). Theoretically, some scholars argue that self-regulation plays a main role in reading comprehension. Specifically, Davis and Gray (2007) stated that readers should apply self-regulated tactics to entirely use their abilities in understanding the texts. Accordingly, self-regulation learning creates engaged reading comprehension while self-regulated readers adjust and monitor their performance with the intention of meeting their distinct learning needs. Similarly, it has been empirically confirmed that self-regulatory reading strategies improve the learner's decision-making, planning, reflection, and evaluation of operative reading strategies as declared by Mulcahy-Ernt and Caverly (2009), and that self-regulatory procedures containing selecting strategies and using them have verified to be critical issues in improving reading capability (Kumi-Yeboah, 2012). Turkben (2019) concentrated on the prominence of using self-regulated strategies in reading, i.e. learners need to recognize aims, administer reading strategies efficiently, observe their

comprehension, and assess their progress in the direction of their aims during reading.

Accordingly, the following research questions are framed for this study:

RQ1: Do self-regulation and reading motivation have significant effects on developing learners' reading comprehension?

RQ2: Do the pre-reading and post-reading activities have different effects on the development of learners' self-regulation?

RQ3: Do the pre-reading and post-reading activities have different effects on the development of learners' reading motivation?

RQ4: Do the pre-reading and post-reading activities have different effects on the development of learners' reading comprehension?

3. Method

3.1 Participants

The population of the paper included 120 Iranian B.A. university learners at Tabriz State University. They were freshmen majoring in engineering and were chosen based on three intact classes. Their age range was from 19 to 22 and their first languages were Farsi, Azeri Turkish, and Kurdish. On the basis of the outcomes of the proficiency test of PET administered to ensure the participants' homogeneity, 111 learners, both males (N = 69) and females (N = 42), whose scores ranged from one standard deviation below and above the mean score of the test were chosen to take part in this study; they were at the intermediate proficiency level. After that, they were randomly classified into two experimental groups and one control group; each one containing 37 learners.

3.2 Instruments

3.2.1 Placement Test of PET

The first instrument was a paper-based PET, including the reading, listening, writing, and speaking sections, that was directed to confirm the homogeneity of the participants. It was a complete preliminary English proficiency test published by Cambridge University Press. The reading section included 35 items. The Listening section included 25 items designed in four parts. The speaking section included four parts, and the writing section consisted of two parts: the first part was composed of five questions and the second part included tests that were related to writing. The allotted time was 75 minutes. The answers were counted as stated by the scoring rubric given in the test. In PET, the full possible marks for reading, writing, listening, and speaking parts are 35, 25, 25, and 25, respectively. The Reading section of this test was also used as the pre-test assessing the learners' reading

comprehension. As the post-test of this paper, the Reading section of another version of the PET test was used. Each test version of PET was directed to individuals within a definite range of English language capacity, founded on the Common European Framework of Reference for Languages (CEFR) scale. Both versions had the same type of questions.

3.2.2. Reading Motivation

Mori (2002) developed the Reading Motivation Inquiry. It contains 26 items designed based on a 5-point Likert scale alternating from "strongly disagree" to "strongly agree"; the center point being "uncertain". The validity of the questionnaire was guaranteed via content validity and the reliability was examined by Cronbach's alpha, which was confirmed for all items (0.93). Mori's (2002) questionnaire on EFL reading motivation involves four factors:
a) Extrinsic Worth of Reading learners
b) Intrinsic Efficacy Worth of Reading
c) Prominence of Reading
d) Reading Effectiveness

Reading Comprehension

Reading comprehension is assessed based on the learners' performances and scores in the reading division of the proficiency test of PET. The reading section included 35 items and the score of this section is 35; that is to say, each item has one point.

3.2.3. Self-Regulation

Brown et al., (1999) established a self-regulation inquiry form. It is a 63-item self-report instrument intended to evaluate the capability for self-regulation in persons in seven stages. These stages mirror the phases required for operative behavioral self-regulation. Failure or shortfalls in any of these stages might bring about unwanted behavior. These stages are as follows:
• Getting related information
• Assessing information and comparing it to norms
• Activating change
• Searching for options
• Formulating a plan
• Applying the plan
• Evaluating the plan's effectiveness

The validity of the questionnaire was guaranteed through content validity and the reliability was examined by Cronbach's alpha, which was confirmed for all items (0.87).

3.3. Procedure

After ensuring the homogeneity of the learners, they were initially requested to fill out the questionnaires related to self-regulation and reading motivation. Additionally, the scores in the reading section of PET were used as their reading ability marks in the pre-test reading performance of the participants. The researchers attempted to expand the reading ability, reading motivation, and self-regulation of the learners through applying pre-reading and post-reading tasks and activities. To this end, the learners were allocated into three groups, randomly classified into two experimental groups and one control group; including 37 learners in each one.

The participants called the experimental individuals gained the treatment that was connected to reading comprehension tasks being administered before and after teaching the reading. In the first experimental class, the learners were requested to do pre-reading activities designed by the researcher. In the second experimental group, the instructor taught the reading text and then asked the learners to do the activities designed by the teacher after the reading phase. The individuals in the control class didn't receive any treatment. The treatment lasted 8 sessions. The reading texts were selected from *Inside Reading*, *Active Skills for Reading*, and *Select Reading* books.

Since the existing study attempts to examine the effectiveness of pre- and post-reading activities on developing learners' reading comprehension, reading motivation, and self-regulation, the members' marks in the reading part of PET were regarded as their performance for the reading comprehension variable. After eight sessions of the treatment, the learners in two experimental groups and a control class were requested to answer the questionnaires on reading motivation and self-regulation that were administered during the post-test of the study. Furthermore, the learners were requested to answer the reading section of another version of the PET proficiency test once more to test their performance of reading comprehension during the post-test stage.

3.4 Data Analysis

The gathered data was examined by SPSS software. To analyze the effect of pre- and post-reading activities and to compare the effectiveness of these tasks in improving self-regulation and reading motivation, and reading comprehension, ANCOVA was administered.

4. Results and Discussion

4.1 Results

The following section provides the findings from the data analysis.

4.1.1. Response to Research Questions

RQ1: Do the pre-reading and post-reading activities have different effects on the development of learners' self-regulation?

To analyze this research question, an ANCOVA test was administered. Initially, as presented in Table 3, the supposition of homogeneity in regression slopes and Levene's Test were administered.

Table 1

Homogeneity in Regression Slopes of Participants' Self-Regulation Scores in Three Groups of Control, Pre-Reading, and Post-Reading

Variables	Sum of squares	df	Mean square	F	P
Group & Pre-test of Self-Regulation	1335.34	2	667.67	28.15	0.061
Error	2489.83	105	23.71		

As it is demonstrated in Table 1, the supposition of homogeneity in regression slopes was established (p>0.05). The following table displays the outcomes of Levene's test.

Table 2

Levene's Test Result

F	df1	df2	P
0.09	2	108	0.9

As demonstrated in Table 2, the assumption of Levene's test based on the equality of the groups' variances was confirmed (p > 0.01). The following table indicates the outcomes of the covariance investigation.

Table 3

The Outcomes of Covariance Analysis of the Difference Concerning the Self-Regulation of the Participants in Three Groups Based on Teaching Methods

Variables	Sum of squares	df	Mean square	F	P	Eta
Pre-test	11431.02	1	11431.02	319.75	0.000	0.74
Group	28853.18	2	14426.59	403.54	0.000	0.88
Error	3825.18	107	35.74			

Table 3 illustrates the results of the covariance analysis administered on the self-regulation marks of the participants in three classes of control, pre-reading, and post-reading. In this analysis, the pre-test scores were under statistical control, that is, the effect of the identical variable scores was

removed from the participants' self-regulation marks, and then the three groups were compared based on the remaining variance. The outcomes of covariance analysis presented that there was a significant dissimilarity between the self-regulation marks of the three groups of participants ($p < 0.05$, $F = 403.54$, Eta $= 0.88$). Thus, the teaching methods of pre-reading and post-reading activities were effective in developing the participants' self-regulation score of 88%. Table 3 shows the standard deviation and mean score of the self-regulation scores of everyone participating in three groups.

Table 4
Mean Score and Standard Deviation of the Participants' Self-Regulation Scores in Three Groups

Variables	Mean	Std. Error	95% confidence interval	
			Lower Bound	Upper Bound
Control	210.97	0.98	209.01	212.92
Pre- Reading	248.63	0.98	246.68	250.58
Post- Reading	240.75	0.98	238.8	242.69

As stated by Table 4, the self-regulation score of the participants in the pre-reading part, with a mean score of 248.63, and the post-reading class with a mean score of 240.75 is notably greater than the mean score of the control class which is 210.97.

Table 5
Pairwise Comparison of Control, Pre-Reading, and Post-Reading Groups in Self-Regulation Score

Variable	Group (I)	Group (J)	Mean Differences (I-J)	Std. Error	P
Self-Regulation	Pre-Reading	Control	37.66	1.39	0.000
		Post-Reading	7.88	1.39	0.000
	Post Reading	Control	29.78	1.39	0.000

Considering the significance levels in Table 5, the outcomes of the two-by-two group difference test using the Bonferroni test demonstrate that there is a significant dissimilarity amid the self-regulation marks of the control group and pre-reading and post-reading classes ($p < 0.05$). Moreover, there is significant dissimilarity between self-regulation scores in pre-reading and post-reading groups, which shows that pre-reading activities have higher effectiveness than post-reading activities in developing the participants' self-regulation ($p < 0.05$).

4.1.2. RQ2: Do the pre-reading and post-reading activities have different effects on the development of learners' reading motivation?

To analyze this research question, an ANCOVA test was administered. Initially, as presented in Table 6, the supposition of homogeneity in regression slopes and Levene's Test were administered.

Table 6

Homogeneity in Regression Slopes of the Participants' Reading Motivation Scores in Three Groups of Control, Pre-Reading, and Post-Reading

Variables	Sum of squares	df	Mean square	F	P
Group & Pre-test of Reading Motivation	887.91	2	443.95	7.9	0.059
Error	5898.08	105	56.17		

As displayed in Table 6, the supposition of homogeneity in regression slopes was established (p>0.05). The following table displays the outcomes of Levene's test.

Table 7

Levene's Test Result

F	df1	df2	P
1.88	2	108	0.15

As demonstrated in Table 7, the assumption of Levene's test based on the equivalence of the groups' variances was confirmed (p > 0.01). The following table displays the outcomes of the covariance examination.

Table 8

The Results of Covariance Analysis of the Difference amid the Reading Motivation of the Participants in Three Groups Based on Teaching Methods

Variables	Sum of squares	df	Mean square	F	P	Eta
Pre-test	3585.13	1	3585.13	56.52	0.000	0.34
Group	9182.14	2	4591.07	72.39	0.000	0.57
Error	6786.005	107	63.42			

Table 8 illustrates the outcomes of covariance analysis administered on the reading motivation marks of the participants in three groups of control, pre-reading, and post-reading. In this analysis, the pre-test scores were under statistical control, that is, the effect of the identical variable scores was removed from the participants' reading motivation scores, and then the three groups were compared based on the remaining variance. The results of covariance analysis exposed that there was a significant dissimilarity between the reading motivation marks of the three groups of participants (p < 0.05, F =

72.39, Eta = 0.57). Thus, the teaching methods of pre-reading and post-reading activities were effective in developing the participants' reading motivation scores of 57%. Table 9 displays the standard deviation and mean score of the participants' reading motivation scores in three groups.

Table 9

Standard Deviation and Mean Score of the Participants' Reading Motivation Scores in Three Groups

Variables	Mean	Std Error	95% confidence interval	
			Lower Bound	Upper Bound
Control	95.91	1.31	93.32	98.51
Pre- Reading	116.91	1.32	114.28	119.53
Post- Reading	112.87	1.33	110.23	115.51

According to Table 9, the reading motivation scores of the learners in the pre-reading class with a mean score of 116.91, and the post-reading class with a mean score of 112.87, are significantly greater than the mean score related to the control group which is 95.91.

Table 10

Pairwise Comparison of Control, Pre-Reading, and Post-Reading Groups in Reading Motivation Score

Variable	Group (I)	Group (J)	Mean Differences (I-J)	Std. Error	P
Reading Motivati on	Pre-Reading	Control	20.99	1.86	0.000
		Post-Reading	4.03	1.9	0.109
	Post Reading	Control	16.95	1.87	0.000

Considering the significance levels in Table 10, the results of the two-by-two group difference test using the Bonferroni test demonstrate that there is a significant dissimilarity amid the reading motivation marks of the control group and pre-reading and post-reading classes (p < 0.05). Nonetheless, no significant dissimilarity is shown between reading motivation scores in pre-reading and post-reading groups. The activities that were done both before and after the reading were equally effective in developing the participants' reading motivation (p > 0.05).

4.1.3. RQ3: Do the pre-reading and post-reading activities have different effects on the development of learners' reading comprehension?

ANCOVA test was conducted, here. Initially, as shown in Table 11, the supposition of homogeneity in regression slopes and Levene's Test were administered.

Table 11

Homogeneity in Regression Slopes of the Participants' Reading Comprehension Scores in Three Groups of Control, Pre-Reading, and Post-Reading

Variables	Sum of squares	df	Mean square	F	P
Group & Pre-test of Comprehension	2.37	2	1.18	0.18	0.83
Error	685.79	105	6.53		

As it is demonstrated in Table 11, the supposition for homogeneity in regression slopes was established (p > 0.05). The following table displays the outcomes of Levene's test.

Table 12

Levene's Test Result

F	df1	df2	P
19.72	2	108	0.02

As demonstrated in Table 12, the assumption of Levene's test based on the equality of the groups' variances was confirmed (p > 0.01). The following table indicates the outcomes of the covariance examination.

Table 13

The Outcomes of Covariance Analysis of the Difference between the Reading Comprehensions of the Participants in Three Groups Based on Teaching Methods

Variables	Sum of squares	df	Mean square	F	P	Eta
Pre-test	3038.7	1	3038.7	472.47	0.000	0.81
Group	579.2	2	289.6	45.02	0.000	0.45
Error	688.17	107	6.43			

Table 13 illustrates the outcomes of the covariance examination administered on the reading comprehension marks of the learners in three groups control, pre-reading, and post-reading. In this analysis, the pre-test scores were under statistical control, that is, the effect of the identical variable scores was removed from the participants' reading ability marks, and then the three groups were compared based on the remaining variance. According to covariance analysis, a significant dissimilarity existed among the reading comprehension marks of the three groups of participants (p < 0.05, F =45.02, Eta = 0.45). Thus, the teaching methods of pre-reading and post-reading activities were effective in developing the participants' reading comprehension scores by 45%.
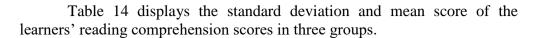
Table 14 displays the standard deviation and mean score of the learners' reading comprehension scores in three groups.

Table 14
Standard Deviation and Mean Score of the Participants' Reading Comprehension Scores in Three Groups

Variables	Mean	Std. Error	95% confidence interval	
			Lower Bound	Upper Bound
Control	19.38	0.43	18.52	20.23
Pre- Reading	24.96	0.41	24.14	25.79
Post- Reading	23.55	0.43	22.7	24.4

According to Table 14, the reading comprehension marks of the learners in the pre-reading class with a mean score of 24.96, and the post-reading class with a mean score of 23.55, are significantly greater than the mean score of the control group which is 19.38.

Table 15
Pairwise Comparison of Control, Pre-Reading, and Post-Reading Groups in Reading Comprehension Score

Variable	Group (I)	Group (J)	Mean Differences (I-J)	Std. Error	P
Reading Comprehension	Pre-Reading	Control	5.58	0.603	0.000
		Post-Reading	1.41	0.59	0.06
	Post Reading	Control	4.17	0.62	0.000

Considering the significance levels in Table 15, the results of the two-by-two group difference test using the Bonferroni test demonstrate that there is a significant dissimilarity amid the reading ability scores of the control group, pre-reading, and post-reading groups ($p < 0.05$). Nonetheless, no significant dissimilarity is shown between reading comprehension scores in pre-reading and post-reading groups. The activities both before and after the reading are equally effective in enhancing the participants' reading comprehension ($p > 0.05$).

4.2. Discussion

The present research attempted to scrutinize the impact of pre-reading and post-reading tasks and activities on the progress of reading motivation, self-regulation, and reading ability and examine how the expansion of self-regulation, reading motivation, and reading comprehension can ultimately improve learners' reading comprehension through the implementation of pre-

reading and post-reading activities. Accordingly, the succeeding research questions were developed:

RQ1: Do the pre-reading and post-reading activities have different effects on the development of learners' self-regulation?

To analyze this research question, an ANCOVA test was administered. The outcomes of covariance analysis revealed that a significant dissimilarity existed among the self-regulation marks of the three groups of the participants in control, pre-reading, and post-reading groups. Thus, the teaching methods of pre-reading, and post-reading activities were effective in developing the participants' self-regulation. Additionally, the self-regulation scores of learners in pre- and the post-reading groups are significantly greater than the mean score of the control group. Hence, there is significant dissimilarity between the self-regulation scores of the control group, post-reading, and pre-reading groups. Besides, the significant dissimilarity between self-regulation scores in post-reading and pre-reading groups shows that pre-reading activities are more effective than post-reading activities in developing the participants' self-regulation.

The findings of this research question are in agreement with the article of Nabavi Ekhlas and Shangarffam (2012), who presented that reading ability, is the only skill that could be expected by behavioral self-regulation tactics. Additionally, Khajavi and Abbasian (2013) examined the development of EFL learners' self-regulation impression in reading by means of the cognitive implementation of concept mapping. The outcomes presented that the learners' self-regulation in reading significantly improved due to the concept mapping strategy direction.

Contrary to the current study, Nejadihassan (2015) examined the association concerning self-regulation, self-efficacy, and reading comprehension among EFL students in Iran. The study disclosed that there was no significant association between self-regulation and reading ability. The outcomes exposed that learners are distinctive and dissimilar in their way of feeling and thinking.

RQ2: Do the pre-reading and post-reading activities have different effects on the development of learners' reading motivation?

To analyze this research question, an ANCOVA test was administered. The results of covariance analysis indicated that there is a significant dissimilarity between the reading motivation marks of the three groups of the participants in control, post-reading, and pre-reading groups. Thus, the teaching methods of the activities both before and after the reading were effective in developing the participants' reading motivation scores.

Additionally, the reading motivation marks of the members in the pre-reading group and the post-reading group are significantly higher than the mean score of the control group. Consequently, a significant difference existed between the reading motivation scores of the control group and pre-reading and post-reading groups. However, there is no significant dissimilarity amid the reading motivation score in pre- and post-reading groups. The activities used both before and after the reading are equally effective in evolving the participants' reading motivation.

The findings of this research question are in agreement with the study of Jamshidi and Yazdani Moghaddam (2013), which explored the influence of Iranian EFL learners' consciousness of reading goals on their motivation to read that emphasized that reading for information and reading for enjoyment could make the learner more interested in reading. In a slightly similar study, Albayrak and Sener (2021) found outcomes that were alike emphasizing that extracurricular activities like reading story books and watching films could significantly influence learners' reading motivation.

The findings of this research question are in proportion to the study of Jingblad and Johansson (2017), who implied that when learners are discouraged they would lack the enthusiasm to engage in reading tasks. The present study displays that reading motivation can lead learners to perform well in reading comprehension. Therefore, reading motivation via the use of pre-reading and post-reading activities can be an operative means to expand the intrinsic motivation of learners to practice reading as a self-directed activity that ultimately develops their comprehension level.

Furthermore, the study directed by Protacio (2017) exposed that reading engagement signifies the learners' motivation to read and be involved in reading activities to develop their understanding of texts, and therefore, the present study offers proof concerning the effectiveness of reading activities and level of comprehension in reading proficiency. Additionally, the results of Ranjbar Mohammadi et al. (2020) indicated that self-regulation training was significantly effective in enlightening EFL learners' reading problem-solving and reading comprehension. Chae (2019) also supported that learners would be capable of internalizing, preserving knowledge, and practicing the reading comprehension approach reinforced by the self-regulated learning model.

Considering the results obtained from the current research question, it can be claimed that reading comprehension development can be enhanced through psychological factors, specifically, self-regulation and reading motivation, which were found to be effective. For that reason, the current study attempted to include practical treatments and apply reading activities before

and after the reading process to examine the effectiveness of these tasks along with the mentioned psychological factors in enhancing learners' reading comprehension. The outcomes of the study, as presented in the following parts, inform the EFL students and instructors about the merits of pre-reading and post-reading activities as well as self-regulation and reading motivation and how helpful they can be in training reading skills.

RQ3: Do the pre-reading and post-reading activities have different effects on the development of learners' reading comprehension?

To analyze this research question, an ANCOVA test was administered. The results of covariance analysis indicated that a significant dissimilarity exists between the reading comprehension marks of the three groups of the participants in the control, post-reading, and, pre-reading groups. Thus, compared to the control group that gained no treatment, the teaching methods of the activities used before and after the reading were effective in developing the participants' reading ability marks. Additionally, the teaching methods of pre-reading and post-reading activities were effective in developing the participants' reading comprehension scores. Consequently, the reading comprehension marks of the learners in the pre-reading group and the post-reading group are significantly greater than the mean score of the control group. Moreover, there is significant dissimilarity concerning reading comprehension marks of the control group and pre-reading and post-reading groups. However, there is no significant dissimilarity amid reading comprehension scores in post-reading and pre-reading groups. In fact, the activities used both before and after the reading are equally effective in evolving the participants' reading comprehension.

The results of this research question are in proportion to the study of Guzel (2022), who illustrated that the activities as pre-, while, and post-reading are effective in improving learners' reading skills. Additionally, Alghonaim (2020) proved that pre-related reading tasks done before the class at home by the learners are effective in developing their reading ability. In the current study, the comprehension level of the learners is augmented by executing the related post-reading and pre-reading activities as the empirical link between learner engagement and reading ability level attributable to the training of pre-reading and post-reading activities is verified.

Generally, based on the obtained findings, it can be claimed that reading skill helps learners to construct meaning based on the text they have comprehended. Readers can construct meaning and evaluate text through the writer's point of view. During the pre-reading and post-reading phases, learners become active and get involved in the reading process. Therefore,

reading activities can be a key factor in developing reading comprehension and a deeper level of understanding can be achieved by dint of these reading activities. Moreover, the usefulness of the reading activities is not only evident in improving reading comprehension but also in enlightening self-regulation and reading motivation of the learners. Accordingly, it can be claimed that these psychological factors play a moderating role in reading comprehension development.

As the results revealed both pre- and post-reading activities were effective in developing self-regulation, reading motivation, and reading comprehension. It can be specified that pre-reading activities engage learners in predicting and guessing the content of the text and they are slightly unaware of the difficulty level of the new vocabulary and grammatical structure of the text. Here, their motivation to read a new text and self-regulated abilities help them to control their thoughts and feelings to face potential problems and misunderstandings of the text. During post-reading activities, learners are motivated enough to complete the assigned tasks since they have covered the text completely and they have comprehended the content using their cognitive skills. Concisely, pre-reading and post-reading activities play a key role in enhancing reading ability, so students are inspired by these activities and they increase their abilities, tactics, and skills for reading comprehension.

5. Conclusion and Implications

Generally, it can be argued that the development of reading comprehension, self-regulation, and reading motivation can be facilitated through administering pre-reading and post-reading activities. Through these activities, learners can use their cognitive resources efficiently, notice and monitor the comprehension process, and organize all variables affecting the comprehension processes including psychological and environmental features. EFL learners, especially in the early stages, undoubtedly need some specific and staged activities in learning different language skills. They should not be encouraged to depend on task completion without concentrating on linguistic and affective factors in learning the language in its natural and authentic context. In this regard, paying attention to learners' cognitive and affective abilities can aid them in confirming whether their comprehension of the foreign language proverbs, vocabularies, grammar, and phrases is correct, and raise their development in receptive and productive skills, especially their reading skills.

Moreover, the teacher can carefully depend on using comprehensible input in the form of reading activities before and after teaching the text to create fruitful comprehension. Thus, the teacher must apply operative activities for both developing learners' level of comprehension and psychological capabilities. In conclusion, it can be indicated that the practical and effective use of reading activities can assist learners in creating, relating, organizing, and comprehending the meaning of the written text being administered in reading comprehension tasks.

Based on the outcomes of this study some valuable pedagogical implications can be yielded. The outcomes of this study verified the prominence and applicability of post-reading and pre-reading activities in language classes that could be beneficial for both EFL instructors and students. Reading activities help learners reinforce their English skills and the ability to solve language problems. It is expected that the consequences of this study can undoubtedly help EFL teachers develop new visions in the direction of using reading activities in teaching English and lead them to a kind of thoughtful and cautious use of pre-reading and post-reading activities in enhancing learners' self-regulation and reading motivation.

The current study was limited to the Iranian context, concentrating on reading comprehension of university students at B.A. level between 19 to 22 years old who were at intermediate proficiency level. Future scholars can examine the psychological characteristics of EFL teachers and their preference to administer particular tasks in different phases of teaching reading comprehension. The proficiency level of the learners can be a determining factor in leading teachers to use specific tasks in the language classes; this can be investigated, as well. Future studies are required on larger groups related to different proficiency levels and several language institutes to create more reliable results.

References

Ajideh, P. (2006). Schema-theory-based considerations on pre-reading activities in ESP textbooks. Retrieved from:
https://www.researchgate.net/publication/253635830_Schema-theory_Based_Considerations_on_Prereading_Activities_in_ESP_Textbooks.

Albayrak, H., & Sener, T. (2021). The relationship between participation in extracurricular activities and motivation of foreign language learning. *International Journal of Psychology and Educational Studies, 8*(2), 122-132.

Alfallaj, F. S. S. (2017). Reading competence of the Saudi EFL learner: Empowering the teachers through linguistics. *Advances in Language and Literary Studies, 8*(3), 12-17.

Alghonaim, A. S. (2020). Impact of related activities on reading comprehension of EFL students. *English Language Teaching, 13*(4), 15-27.

Ammar, A. (2009). The effects of self-regulated reading strategy development on the prospective EFL teachers' critical reading skills and reading motivation. Retrieved from:
   http://repository.ksu.edu.sa/jspui/handle/123456789/4671.

Ansarin, A. A., & Javadi, S. (2018). Masked semantic/associative and translation priming across languages. *East European Journal of Psycholinguistics*, *5*(1), 7-15.

Brown, J. M, Miller, W. R, & Lawendowski, L. A. (1999). The self-regulation questionnaire. In: Vande Creek, L., Jackson, T.L., (eds.) *Innovations in clinical practice: A sourcebook*. Vol. 17. Sarasota, FL: Professional Resource Press/Professional Resource Exchange. 281-292.

Chae, J. H. (2019). Efficacy of self-regulation strategy on reading comprehension development for students with reading difficulties. Retrieved from:
   https://repository.stcloudstate.edu/cgi/viewcontent.cgi?article=1092&context=sped_etds.

Chandavimol, M. (1998). Reading comprehension: An active engagement or a passive experience? *PASAA, 28*, 31-42.

Colorado, C. (2007). Introducing a text before reading. Retrieved from:
   http://www.readingrockets.org/article/14339.

Csizer, K., & Dornyei, Z. (2005). The internal structure of language learning motivation and its relationship with language choice and learning effort. *The Modern Language Journal, 89*(1), 19-36. http://doi.org/10.1111/j.0026-7902.2005.00263.x.

Davis, S. G., & Gray, E. S. (2007). Going beyond test-taking strategies: Building self-regulated students and teachers. *Journal of Curriculum and Instruction, 1*(1), 31-47.
   http://doi.org/10.3776/joci.2007.v1n1p31-47.

Day, R., & Bamford, J. (2000). Reaching reluctant readers. *English Teaching Forum, 38*(3), 12-17.

Dhanapala, K. V., & Hirakawa, Y. (2016). L2 Reading motivation among Sri Lankan university students. *Reading Psychology, 37*(2), 202-229. http://doi.org/10.1080/02702711.2015.1025163.

Dobakhti, L., Zohrabi, M., & Masoudi, S. (2022). Scrutinizing the affective predictors of teacher immunity in foreign language classrooms. *Teaching English Language, 16*(1), 65-88.

https://doi.org/10.22132/TEL.2022.148550.

Dobakhti, L., Zohrabi, M., & Tadayyon, P. (2020). An Investigation into the Impact of Rote and Mnemonic Strategies on Vocabulary Learning of Iranian Elementary EFL Learners. *Teaching English Language*, *14*(2), 323-344.

Dornyei, Z. (2009). Individual differences: Interplay of learner characteristics and learning environment. *Language Learning, 59*(1), 230-248.

Farrokhi, F., Zohrabi, M., & Chehr Azad, M. H. (2018). Corrective feedback and Iranian EFL learners' spoken complexity and accuracy. *Teaching English Language*, *12*(2), 117-143. http://doi.org/10.22132/tel.2018.76934.

Ferreira, P. C., & Simao, A. M. V. (2012). Teaching practices that foster self-regulated learning: A case study. *Educational Research eJournal, 1*(1), 1-16.

Gardner, R. C., & Maclntyre, P. D. (1993). A student's contribution to second language learning. Part II: Affective variables. *Language Teaching, 26*(1), 1-11.

Ghelichli, Y., Seyyedrezaei, S. H., Barani, G., & Mazandarani, O. (2022). The mediating role of self-regulation between student engagement and motivation among Iranian EFL learners: A structural equation modeling approach. *Journal of Modern Research in English Language Studies, 9*(1), 183-206.

Gough, P. B. (1972). One second of reading. In J. F. Kavanagh & I. G. Mattingly (Eds.), *Language by ear and by eye: The relationship between speech and reading.* Massachusetts Institute of Technology.

Grabe, W. (2009). *Reading in a second language: Moving from theory to practice*. Cambridge University Press.

Guzel, S. (2022). The importance of reading activities in reading comprehension. *Journal of Interdisciplinary Innovation Research, 2*(1), 29-34.

Hemmati, F., Sotoudehnama, E., & Morshedian, M. (2019). The impact of teaching self-regulation in reading on EFL learners' motivation to read: Insights from an SRL model. *Journal of Modern Research in English Language Studies, 5*(4), 131-154.

Jamshidi, P., & Yazdani Moghaddam, M. (2013). The effect of Iranian EFL learners' awareness of reading comprehension strategies on their motivation to read. *International Journal of English Language Education, 1*(1), 23- 37. https://doi.org/10.5296/ijele.v1i1.2995.

Jingblad, J. & Johansson, H. (2017). How to create an environment in which students are self-motivated to read fiction in English in the ESL classroom: A quantitative study from students' point of view analyzed

with the self-determination theory. *Semantic Scholar* https://www.semanticscholar.org/

Kamgar, N., & Jadidi, E. (2016). Exploring the relationship of Iranian EFL learners' critical thinking and self-regulation with their reading comprehension ability. *Procedia - Social and Behavioral Sciences, 232*, 776-783.

Kern, R. G. (2003). Literacy as a new organizing principle for foreign language education. In P. C. Patrikis (Ed.), *Reading between the Lines: Perspectives on foreign language literacy* (pp. 40-59). Yale University Press.

Khajavi, Y., & Abbasian, R. (2013). Improving EFL students' self-regulation in reading English using a cognitive tool. *The Journal of Language and Linguistic Studies, 9*(1), 206-222.

Koehler, A. (2007). *Raising awareness of self-efficacy through self-regulated learning strategies for reading in secondary ESL classroom* [Unpublished master's thesis]. Hamline University, Minnesota. Retrieved from : http://www.hamline.edu/WorkArea/DownloadAsset.aspx?id=2147490886

Komiyama, R. (2013). Factors underlying second language reading motivation of adult EAP students. *Reading in a Foreign Language, 25*(2), 149-169.

Kumi-Yeboah, A. (2012). Self-regulated learning and reading in social studies – K-12 level. *International Forum of Teaching and Studies, 8*(2), 25-31.

Maftoon, M., & Tasnimi, P. (2014). Application of self-regulation in reading comprehension. *Journal of Language Teaching and Research, 5*(4), 844-855. http://doi.org/10.4304/jltr.5.4.844-855.

Marzban Qadikolaei, A., & Mansouri Qadikolaei, A. (2023). The impact of peer Corrective feedback on extroverted and introverted Iranian elementary L2 learners' reading comprehension. *Journal of Modern Research in English Language Studies, 10*(4), 87-111.

Mbato, C. L. (2013). Facilitating EFL learners' self-regulation in reading: Implementing a metacognitive approach in an Indonesian higher education context (Master's thesis). Southern Cross University, Lismore, NSW.

Mori, S. (2002). Redefining motivation to read in a foreign language. *Reading in a Foreign Language, 14*(2), 91-110.

Mills, S. (2022). Post-reading activities for ESL students. Retrieved from file:///C:/Users/1-PC/Downloads/45-1.pdf.

Mulcahy-Ernt, P. I., & Caverly, D. C. (2009). Strategic study-reading. In R. F. Flippo, & D.C. Caverly (Eds.), *Handbook of college reading and study strategy research* (2nd ed., pp. 177-198). Erlbaum.

Nabavi Ekhlas, N., & Shangarffam, N. (2012). The relationship between determinant factors of self-regulation strategies and main language skills and overall proficiency. *Social and Behavioral Sciences, 70*, 137-147. https://doi.org/10.1016/j.sbspro.2013.01.049.

Nejadihassan, S. (2015). The relationship between self-efficacy, self-regulation and reading comprehension of Iranian EFL learners. (Unpublished master's thesis), Islamic Azad University, Gorgan, Iran.

Nemati Moghaddam, N., & Mahmoudi, A. (2016). The effects of pre-reading activities on reading comprehension of Iranian EFL learners. *Advances in Language and Literary Studies, 7*(3), 235-242. https://doi.org/10.7575/aiac.alls.v.7n.3p.235.

Protacio, M. S. (2017). A case study exploring the reading engagement of middle grades English learners. *RMLE Online, 40*(3), 1-17.

Ranjbar Mohammadi, R., Saeidi, M., & Ahangari, S. (2020). Self-regulated learning instruction and the relationships among self-regulation, reading comprehension and reading problem solving: PLS-SEM approach. *Cogent Education, 7*(1), 1-22. https://doi.org/10.1080/2331186X.2020.1746105.

Stoeger, H., & Ziegler, A. (2008). Evaluation of classroom-based training to improve self-regulation in time management tasks during homework activities with fourth graders. *Metacognition and Learning, 3*(3), 207-230.

Swalander, L., & Taube, K. (2007). Influences of family-based prerequisites, reading attitude, and self-regulation on reading ability. *Contemporary Educational Psychology, 32*(2), 206-230.

Takase, A. (2007). Japanese high school students' motivation for extensive L2 reading. *Reading in a Foreign Language, 19*(1), 1-18.

Toprak, E. L., & Almacıoglu, G. (2009). Three reading phases and their applications in the teaching of English as a foreign language in reading classes with young learners. *Journal of Language and Linguistic Studies, 5*(1), 21-36.

Turkben, T. (2019). The effect of self-regulation based strategic reading education on comprehension, motivation, and self-regulation skills. *International Journal of Progressive Education, 15*(4), 27-46. https://doi.org/10.29329/ijpe.2019.203.3.

Vidal-Abarca, E., Mana, A., & Gil, L. (2010). Individual differences for self-regulating task-oriented reading activities. *Journal of Educational Psychology, 102*(4), 817-826. https://doi.org/10.1037/a0020062.

Wigfield, A., & Guthrie, J. (2000). Engagement and motivation to read. In M. Kamil, & P. Mosenthal, D. Pearson, R. Barr (Eds.), *Handbook of reading research*. Earlbaum.

Williams, E. (1987). Classroom reading through activating content-based schemata. *Reading in a Foreign Language, 4*, 1-7.

Yokubjonova, Sh., Yunusov, A., & Ummatova, L. (2022). The use of post-reading activities in secondary schools in FLT. *Eurasian Journal of Learning and Academic Teaching, 8*, 181-182.

Zhang, D. (2022). Affective cognition of students' autonomous learning in college English teaching based on deep learning. Retrieved from https://www.frontiersin.org/articles/10.3389/fpsyg.2021.808434/full.

Zimmerman, B. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology, 82*(3), 1-23.

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: an overview. *Educational Psychology, 25*(1), 3-17.

Zohrabi, M., & Jafari, H. (2020). The role of think-pair-share interactional activity on improving Iranian EFL learners' willingness to communicate. *Teaching English Language*, *14*(1), 153-182.

Zohrabi, M., & Radkhah, S. (2019). A comparative analysis of institutional identities in a corpus of English and Persian News interviews. *Journal of Research in Applied Linguistics*, *10*(1), 132-154.

Zohrabi, M., & Shokrzadeh, A. (2017). A study of Iranian EFL teachers' perceptions and practices regarding listening instruction. *Teaching English Language*, *11*(1), 1-38.

Zumbrunn, S., Tadlock, J., & Roberts, E. D. (2011). *Encouraging self-regulated learning in the classroom: A review of the literature*. Metropolitan Educational Research Consortium (MERC), Virginia Commonwealth University.