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Effect of Self-regulation Instruction on L2 Motivational Self-system and Reading Comprehension of Iranian EFL Learners

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Abstract
While research signifies the role of emotions in second/foreign language education, the impact of receiving explicit instruction on EFL students' emotions and language skills has been overlooked. To fill this gap, this study investigated the contribution of self-regulation strategy instruction to EFL learners' L2 motivational self-system, involving *ideal L2 self*, *ought to L2 self*, and *attitude to L2 learning*. To this end, a mixed-methods research design was utilized. The researchers administered L2 Motivational Self Questionnaire, Self-Regulated Language Learning Questionnaire (SRLLQ), and a Reading Test to 60 Iranian female EFL students. Also, semi-structured interviews were held to unpack students' opinions concerning the impact of self-regulatory instruction on their L2 motivational self-system. The results corroborated the effectiveness of self-regulation instruction in enhancing learners' L2 Motivational Self-System, improving reading performance, and increasing motivation, autonomy, and self-confidence. The results encourage teacher educators to make teachers familiar with novel approaches regarding self-regulation instruction to increase the quality of language teaching.

Keywords: Ideal L2 self; L2 motivational self-system; Ought to L2 self; Reading comprehension; Self-regulation instruction

INTRODUCTION

Self-regulated learning, a psychological construct, is defined as self-generated thoughts and behavior that are planned and cyclically adjusted based on performance feedback to attain self-set purposes (Zimmerman, 1989). Zimmerman (2008) regards self-regulated learning as setting purposes, planning strategically, self-monitoring one's effectiveness, and self-evaluating while learning.

Second/foreign language literature buttresses the teachability of self-regulation, especially its processes, strategies, and how it can be (re)constructed by trainers (Moyer, 2018). Employing self-regulated learning strategies can upgrade study techniques, monitor advancement and performance, improve the desired outcomes, and assess academic progress (Zumbrunn et al., 2011). The utilization of self-regulation is a highly developed process consisting of the awareness and further implementation of learning strategies, comprehensive cognition, and self-awareness (Lockee, 2008).

Disapproving of the concept of cognitive-centeredness, motivation, alongside other affective factors, is indispensable for successful language learning (Brown, 1987). Learners possessing high self-confidence, motivation, and a low level of anxiety are better empowered in L2 acquisition (Krashen, 1985). Conversely, learners' low self-esteem, low motivation, and debilitating anxiety raise learners' affective filter,

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thereby building mental blocks to hinder language acquisition.

Researchers, in terms of different language skills, contend that self-regulation plays significant roles in reading comprehension. Paris and Paris (2001) argued that self-regulation is necessary for students' reading comprehension as it requires processing and understanding texts simultaneously. Previous research also illustrated that EFL students usually find it difficult to autonomously regulate their reading comprehension given the complexities involved in L2 education and reading non-native language texts (Ferreira & Simão, 2012; Maftoon & Tasnimi, 2014). According to Davis and Gray (2007), readers must utilize self-regulated strategies to fully demonstrate their abilities to comprehend texts. Others confirmed that self-regulatory strategies enrich the student's own planning, decision-making, reflection, and evaluation of effective reading strategies (Mulcahy-Ernt & Caverly, 2009). Self-regulatory processes involving choosing and employing strategies (Zimmerman, 2008) have shown to be instrumental factors in building up reading ability (Kumi-Yeboah, 2012).

Building upon the aforementioned studies, it can be revealed that the literature has been limited to the impact of self-regulation instruction on EFL students' reading comprehension without taking psycho-affective and motivational self-systems into account. Additionally, prior research has just sought for designing models for implementing self-regulation in L2 contexts and reading skills (e.g., Morshedian et al., 2017). However, the interplay of motivational self-systems and self-regulation has remained under-explored. Bridging these gaps is paramount in that knowing EFL students' motivational self-systems can foster their use of self-regulation strategies, especially regarding reading skills. Inspired by these drawbacks, this study investigated the impacts of self-regulation on learners' motivated behavior, ideal L2 self, ought to L2 self, and attitude to L2 learning. Adopting a mixed method approach, the researchers seek to develop a model of self-regulation and L2 motivational self-system that could be utilized as qualification criteria to provide a better understanding of how to assist students in making academic progress.

LITERATURE REVIEW

Self-regulation

While the concept of self-regulation has its roots in educational psychology, it has captured attention in language learning (Tseng et al., 2015). Despite the indistinct definitions of self-regulation, it is admitted as a multidimensional, process-oriented construct (Dörnyei & Ryan, 2015). Self-regulation is an individual's capacity and incentive to take initiatives and apply, monitor, and evaluate numerous learning strategies autonomously with the aim of making knowledge growth easier (Seli & Dembo, 2020). Within SLA, Zimmerman and Kitsantas (2014) define self-regulation as the self-directive processes that language learners utilize to stimulate cognition, emotions, and behavior to achieve academic goals.

Self-regulated learning, being multidimensional, highlights the dynamic role of the learner (Abar & Loken, 2010). Several models of self-regulated learning have been proposed to explain how students become responsible for regulating their own performance (Boekaerts et al., 2000). Although these theories suggest different perspectives on self-regulated learning, they highlight that self-regulated learner are actively engaged in creating knowledge and using various cognitive/metacognitive strategies to regulate their academic learning (Zimmerman, 2000).

Self-regulated students are cognizant of task demands and their needs regarding optimum learning experiences (McCann & Garcia, 1999). Self-regulated learners actively keep away from behavior and cognitions deleterious to academic success; they are aware of the strategies essential for learning to happen and realize how to employ strategies that raise perseverance and performance (Byrnes et al., 1999). They set standards/aims in their learning, monitor their progress, and adjust their cognition, motivation, and behavior to achieve goals (Pintrich, 2004). This enlightens students to decide as to whether their learning process should carry on in the same manner or some

essential changes need to be made (Muis, 2007).

Motivation

Research regarding language learning motivation started with Gardner and Lambert's (1972) theories by emphasizing the significance of culture and attitude toward language learning. They developed the concepts of integrativeness and instrumentality—the desire to integrate and learn about another cultural community, as well as the utilitarian benefit of language acquisition. Dissatisfaction with the conventional model of L2 motivation, focusing on the notion of integrativeness, led to the reconceptualization of L2 motivation theories. Researchers broadened the idea so that it could be applied to varied circumstances, particularly where integration was infeasible or when identification with the L2 community was unlikely to happen (Dörnyei et al., 2006). Dörnyei's (2009) theory of the L2 Motivational Self-System reconceptualized motivation, highlighting the impacts of the social context, the learner's identity, and psychological view of the self.

The psychological concepts influencing Dörnyei's theory were presented by Markus and Nurius' (1986) theory of the possible selves and Higgins' (1987) theory of the ought-to-selves. The "possible selves" concept comprised the idea of what we wish to become, what we could become, and what we are afraid of becoming. The examination of the ideas and sensations that individuals experience while motivated got easier thanks to the conception of possible selves. Higgins' (1987) motivational theory distinguished between the ideal self and the ought to L2 self. While the ideal self is concerned with the qualities one desires to acquire, the ought to self is related to the attributes one believes should obtain in accordance with obligations and responsibilities (Dörnyei, 2009).

Utilizing the possible self's theory (Markus & Nurius, 1986) and the self-discrepancy theory (Higgins, 1987) in social psychology, Dörnyei (2005) put forward the L2 Motivational Self-System within L2 studies. The system integrates the conceptualizations of L2 motivation by Ushioda (2001) and Noels (2003). Ushioda (2001) found motivation a complicated construct having eight dimensions, while Noels (2003) introduced motivation as a construct with intrinsic, extrinsic, and integrative orientations. In line with Noels' (2003) approach, Dörnyei (2005) categorizes Ushioda's (2001) eight motivational dimensions into a broad construct of the L2 Motivational Self-System consisting of three dimensions: the Ideal L2 Self, the Ought-to L2 Self, and the L2 Learning Experience. The Ideal L2 Self is a positive self-image of what L2 learners would ideally like to become in the future. When L2 learners see a gap between the ideal image and their current situation, they may be motivated to acquire the target language. The Ought to L2 Self refers to a hypothetical self-image that L2 learners think they should cultivate to meet others' expectations or avoid potentially negative repercussions when learning. The L2 Learning Experience denotes the immediate learning environment or experience of L2 learners, as well as the contextual and executive motivations connected with it.

Empirical Studies

Literature on L2 motivation and self-regulatory strategies reveals that these constructs have witnessed a surge of investigations in various educational milieus. As for the intersection of self-regulation and motivation, scholars pinpointed that self-regulation is by no means a mere cognitive variable but a penetrating factor that is deeply integrated in motivational beliefs (Ge, 2021). This strong tie led to the introduction of "motivational self-regulation strategies" that L2 learners use to maintain their motivational self-regulatory process to develop their academic engagement and persistence (Miele & Scholer, 2017). Additionally, developing EFL students' self-regulation via training generates many positive outcomes in academia, notably increased hope and passion for learning (Yin, 2021).

Similarly, different investigations have been conducted approving the role of self-regulation enhancement of students' in improving their performance in different language skills including speaking (Alotumi, 2021), listening (Sarkeshikian et al., 2018), writing (Eslami & Sahragard, 2021), and reading (Maftoon & Tasnimi, 2014). Despite these studies on the contribution of self-

regulation instruction, the possible association between EFL students' motivational self-system, self-regulatory strategies, and reading comprehension has been limitedly explored. Against this shortcoming, the present study aimed to unpack the interconnection among Iranian EFL students' L2 motivational self-system, self-regulatory strategies, and reading comprehension by answering the following questions:

RQ1. *Do self-regulation strategies have any significant effect on Iranian EFL learners' L2 motivational self-system and its components?*

RQ2. *Do self-regulation strategies have any significant effect on the reading comprehension of Iranian learners?*

RQ3. *What are the perceptions of Iranian EFL learners toward self-regulation strategies and their contribution to their motivation for language learning?*

METHOD

Design

This study followed a sequential explanatory mixed-methods research design to offer triangulated findings. The researcher first collects and analyzes quantitative data, then moves on to qualitative data (Creswell, 2005). A mixed-methods research design was chosen to utilize both qualitative and quantitative data, providing stronger research findings (Leong & Austin, 2006). Accordingly, in this study, self-regulated learning strategies were the independent variable, whereas L2 Motivational Self, Ideal L2 self, Ought to L2 self, attitude to L2 learning and reading comprehension were the dependent variables, and gender and language proficiency as controlled variables.

Participants

The participants, located through convenience sampling, were 60 females intermediate EFL students at Shayestegan Language School in Tehran, Iran. First, the researchers administered the Oxford Placement Test (OPT) to 120 EFL students for homogenization. The participants' performance was calculated out of 60 and those who were classified as intermediate (scores between 28 and 47) were selected. They were randomly assigned to an experimental group who received self-regulatory strategies instruction and a control group exposed to conventional instruction. The participants' age ranged from 12 to 15 years and they were selected based on their voluntary participations.

Materials and Instruments

Instrument 1

L2 Motivational Self Questionnaire

The L2 Motivational Self Questionnaire (L2MSQ) encapsulating three dimensions of the L2 Motivational Self—the Ideal L2 self (6 items), the Ought-to L2 self (6 items), and the L2 Learning experience (6 items) was utilized. The items, developed by Taguchi et al. (2009), were measured by six-point Likert scales, from 1 showing 'strongly disagree' to 6 showing 'strongly agree' (Appendix A). Moreover, the internal consistency of the scores was computed applying Cronbach's alpha formula, indicating a high index of overall consistency ($\alpha = .90$).

Instrument 2

Self-Regulated Language Learning Questionnaire (SRLLQ)

This scale was validated by Salehi and Jafari (2015) to measure EFL learners' self-regulatory learning behavior (Appendix B). The instrument included thirteen sub-scales with 41 items: intrinsic motivation, self-efficacy, locus of control orientation (attribution), attitude, organization, memory strategies, self-monitoring, self-evaluation, planning and goal setting, concentration and sustained attention, effort regulation, regulation of environment, and help seeking. The items were in a five-point Likert scale from "strongly disagree" to "strongly agree". Moreover, the questionnaire was reported to be both reliable ($r = .71$) and valid to measure the construct.

Instrument 3

Reading Test

The other instrument was one pretest and one posttest of reading comprehension for both control and experimental groups for determining students' reading proficiency. Cambridge the Key English Test as a frequently used test for young students was implemented (Appendix C). It consists of reading through short passages

and answering some multiple-choice and cloze/gap fill questions.

Instrument 4

Interchange 2

Another instrument was Interchange 2, the intermediate level. Four units were covered during 16 sessions. Since students had to practice self-regulation strategies at minimum 16 sessions, the researchers provided extra reading passages from New Headway (intermediate level). Moreover, the provided passages were used in both the control and experimental groups and the students read similar reading passages in each session, despite their different instruction.

Instrument 5

Interview

In this phase, the researchers developed the interview items and checked its content validity using two experts' judgments. Having revised the items, the researchers conducted the semi-structured interviews with 30 participants to explore students' opinions about the effectiveness of self-regulatory instruction on L2 motivation self-system.

Data Collection Procedure

Initially, the OPT was administered to 120 EFL learners to measure their general English proficiency for homogenization. Sixty participants whose scores were identified at intermediate level (scores between 37 and 47) were randomly selected.

The pre-test data was collected, consisting of the learners' performance on Reading comprehension test and their completion of L2 Motivational Self Questionnaire. The researchers then distributed the question booklets and gave instructions to the participants on how to answer. Interview as post-hoc study was conducted to collect more precise information on the components of learners' motivational self-system.

Meanwhile, the participants were assigned to experimental and control groups. In both classrooms, Interchange 2 from lesson 1 to 4 were covered in 16 sessions. While the control group received traditional deductive teacher-fronted instruction, the experimental group was exposed to self-regulation strategies in each session. As there were seven self-regulation strategies, each strategy was practiced in two sessions. The instructor firstly provided a model of the self-regulatory strategy, and then it was implemented by the learners. During the treatment, the instructor introduced the strategies on how students organize and interpret information and act in/during reading texts as following:

Organizing: The instructor introduced organizing strategy through "thinking aloud." Organizing required determining the important points in what they read and putting them into their own words. Students also drew pictures/diagrams/charts related to the passages to identify, connect, and remember the main ideas.

Goal-setting and planning: Students were timed while reading to see how well they could identify main ideas and supporting details. Setting educational goals including sequencing, time management, and pacing were the main activities during reading.

Keeping records and monitoring: The students needed to record events, list errors, maintain portfolios, and keep drafts of assignments during reading. The instructor also made students read aloud, make notes, use checklists, or note miscues on the text.

Rehearsing and memorizing: The researcher asked the students to memorize materials by overt/covert practice, using mnemonic devices, mental imagery, and repetition.

Self-evaluation: The researcher asked the students to do self-initiated evaluations of their progress, like analyzing the text. The instructor asked the students to read aloud and evaluate their reading and taught them how to keep charts of their reading rate-growth.

Reviewing records: The teacher required students to make self-directed efforts to review records and reread notes to prepare for future testing.

On the other hand, completing the treatment, the participants took the post-test of reading

comprehension and filled out L2 Motivational Self Questionnaire. Finally, semi-structured interviews were conducted with 30 learners in-person taking 20 to 30 minutes, which were audio-recorded for subsequent analysis.

Data Analysis Procedure

Regarding the quantitative phase of the study exploring the effectiveness of self-regulation strategies on Iranian EFL learners' L2 motivational self-system, Independent Samples t-test and a multivariate analysis of covariance (MANCOVA) were used. Additionally, concerning the effectiveness of self-regulation strategies on Iranian EFL learners' reading comprehension skill, ANCOVA was run.

Moreover, in the qualitative phase, EFL learners' responses to interviews were analyzed through thematic analysis. Firstly, their responses were transcribed and summarized. After double-checking the transcriptions to find any mismatches with the audio-recordings, the transcriptions were once more reviewed and coded using keywords from the interview questions. Such a categorization led to the identification of the recurrent patterns in the learners' responses. Drawing on descriptive statistics, the recurrent themes/patterns in the transcriptions were grouped together, and their frequencies were counted. To observe the credibility in coding the themes, 10% of the data was given to a second coder to examine the appropriateness of the extracted themes. Discussing the discrepancies in theme extraction and solving the disagreements, the researchers and the second coder reached 96% of inter-coder agreement.

RESULTS

Results to the First Research Question

To examine the effectiveness of self-regulatory instruction on improving EFL learners' L2 motivational self-system, in the first research question, two Independent Samples t-test were run. The first Independent Samples t-test was computed to compare the experimental and control groups' mean score of L2 motivational self-system on the pre-administration of L2 Motivational Self Questionnaire to prove the homogeneity of experimental and control groups in terms of their L2 motivational self-system. The findings illustrated that for the control group, the mean score on pre-administration of L2 Motivational Self-system was 44.73 with the standard deviation 2.14. For the experimental group, the mean score was 43.76 with the standard deviation 1.91 (Table 1).

Table 1

Descriptive Statistics and Independent Samples t-test for the Experimental and Control Groups' Performance in the Pre-test

	Grouping	N	M	SD	t	df	Sig.	Mean Difference
Pre-administration of the L2 Motivational Self-system	Control	30	44.73	2.14	1.83	58	.07	.96
	Experimental	30	43.76	1.92				

Table 1 shows that there was no statistically significant difference in the scores of Control Group (M= 44.73, SD= 2.14, two-tailed) and Experimental group (M= 43.76, SD= 1.92; t (58)= 1.83, p=.07, p>.05) on pre-administration of L2 Motivational Self-system. To assess the efficacy of the employment of self-regulatory instruction on improving EFL learners' L2 motivational self-system, another Independent-Samples t-test was calculated to compare the two groups' means on the post administration of L2 Motivational Self-system (Table 2).

Table 2

Descriptive Statistics and Independent Samples t-test for the Experimental and Control Groups' Performance in the Post-test

	Grouping	N	M	SD	T	df	Sig.	Mean Difference
Pre-administration of the L2 Motivational Self-system	Control	30	48.76	4.76	-15.19	58	.00	-20.60
	Experimental	30	69.36	5.69				

As indicated in Table 2, the mean score of L2 Motivational Self-system for the control group was 48.76 with the standard deviation 4.76 on pre-administration. However, for the experimental group, the mean score was 69.36 with the standard deviation 5.69. The findings of Independent-Samples t-test showed that the score of the control group (M= 48.76, SD= 4.76) significantly differed from the experimental group (M= 69.36, SD= 5.69; t (58) = -15.19, p=00, p<.05) on the post-test administration of L2 Motivational Self-system (Table 2). This finding showed the efficacy of self-regulatory strategy instruction in enhancing learners' L2 motivational self-system.

To investigate the contribution of self-regulatory instruction on improving the components of Motivational Self-system, namely Ideal L2 Self, Ought to L2 self, and Attitude to L2 learning, a MANCOVA was performed. Before running MANCOVA, the assumptions of normality, linearity, and homogeneity of data were checked. After meeting these assumptions, the equality of variances and covariances was tested through Box's test. The result (F = 1.63, p = .132 > .05) indicated that this assumption was also met. Finally, the data was probed for multivariate outliers. The maximum Mahalanobis value for the three dependent variables was 7.84, which was safely below the critical value of 16.27, indicating lack of outliers. Having all the assumptions in place, the MANCOVA was legitimately run (Table 3).

Table 3

MANCOVA: Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig	Partial Eta Squared
Corrected Model	Ideal post	744.41[a]	4	186.10	73.94	.00	.84
	Ought post	616.84[b]	4	154.21	27.06	.00	.66
	Attitude post	1544.97[c]	4	386.24	56.44	.00	.80
Intercept	Ideal post	24.30	1	24.30	9.65	.00	.14
	Ought post	16.02	1	16.02	2.81	.09	.04
	Attitude post	251.16	1	251.16	36.70	.00	.40
Ideal pre	Ideal post	10.69	1	10.69	4.25	.04	.07
	Ought post	4.23	1	4.23	.74	.39	.01
	Attitude post	67.18	1	67.18	9.81	.00	.15
Ought pre	Ideal post	.68	1	.68	.27	.60	.00
	Ought post	5.61	1	5.61	.98	.32	.01
	Attitude post	48.38	1	48.38	7.07	.01	.11
Attitude pre	Ideal post	6.79	1	6.79	2.69	.10	.04
	Ought post	2.31	1	2.31	.40	.52	.00
	Attitude post	9.79	1	9.79	1.43	.23	.02
Grouping	Ideal post	693.82	1	693.82	275.65	.00	.83
	Ought post	593.80	1	593.80	104.23	.00	.65
	Attitude post	1103.55	1	1103.55	161.27	.00	.74
Error	Ideal post	138.43	55	2.51			
	Ought post	313.33	55	5.69			
	Attitude post	376.36	55	6.84			
Total	Ideal post	25975.00	60				
	Ought post	22099.00	60				
	Attitude post	25128.00	60				
Corrected Total	Ideal post	882.85	59				
	Ought post	930.18	59				
	Attitude post	1921.33	59				

a. R Squared = .843 (Adjusted R Squared = .83)

c. R Squared = .804 (Adjusted R Squared = .79)

b. R Squared = .663 (Adjusted R Squared = .63)

Based on Table 3, after controlling for the effect of the pretest differences, all three components of motivational system were significantly different between the experimental and control groups. The results for all components, ideal L2 self ($F_{(1, 59)} = 275.66$, $p = .00 < .05$), ought to L2 self ($F_{(1, 59)} = 104.23$, $p = .000 < .05$), and attitudes towards L2 learning ($F_{(1, 59)} = 161.27$, $p = .00 < .05$), represented very large effect sizes. Table 4 shows the pairwise comparison of the results for control and experimental groups based on marginal means.

Table 4
MANCOVA: LSD Post Hoc

Dependent Variable	(I) grouping	(J) grouping	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference	
						Lower Bound	Upper Bound
Ideal post	Control	experimental	-7.12*	.42	.00	-7.98	-6.26
	experimental	control	7.12*	.42	.00	6.26	7.98
Ought post	Control	experimental	-6.59*	.64	.00	-7.88	-5.29
	experimental	control	6.59*	.64	.00	5.29	7.88
Attitude post	Control	experimental	-8.98*	.70	.00	-10.40	-7.56
	experimental	control	8.98*	.70	.00	7.56	10.40

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

As reported in Table 4, in all cases, the experimental group outperformed the control group. Thus, the treatment was positively effective in boosting participants' ideal L2, ought to L2, and attitude towards L2 learning.

Results to the Second Research Question

To measure the effectiveness of self-regulation strategies on Iranian EFL learners' reading comprehension, ANCOVA was run. Table 5 illustrates the findings of descriptive statistics for control and experimental group's score on post-test administration of Reading Comprehension Test.

Table 5
The Findings of Descriptive Statistics for Control and Experimental Group's Score on Post-test

Grouping	Mean	Std. Deviation	N
Control	14.70	2.40	30
Experimental	24.03	2.53	30
Total	19.36	5.30	60

A one-way between-groups analysis of covariance was calculated to compare the effectiveness of two different interventions of employing self-regulation strategies and conventional instruction on learners' reading comprehension scores. The independent variable was the type of treatment (self-regulation strategies and conventional instruction), the dependent variable was learners' scores on the post-test administration of reading comprehension test, and the participants' scores on the pre-test were used as the covariate in this analysis (Table 6).

Table 6
The Findings of Tests of Between-Subjects Effects

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1462.69[a]	2	731.34	209.22	.00	.88
Intercept	125.57	1	125.57	35.92	.00	.38
Pretest	156.02	1	156.02	44.63	.00	.43
Grouping	1378.12	1	1378.12	394.25	.00	.87
Error	199.24	57	3.49			
Total	24166.00	60				
Corrected Total	1661.93	59				

a. R Squared = .880 (Adjusted R Squared = .87)

As illustrated in Table 6, there was a statistically significant difference between the control and experimental groups on post-test scores, F (1, 59) = 394.25, p=.00, partial eta squared= .87 which is a large effect size (W=0.01, M=.06, L=.14).

Results to the Third Research Question

The interview data analysis indicated that most learners believed that self-regulation strategies enhanced learners' autonomy (65.5 %), increased learners' interest (57.6 %), boosted their self-confidence (53.8 %), informed learners of the effective strategies (45.4), and led to understanding learners' strengths and weaknesses (34.5), as depicted in Figure 2.

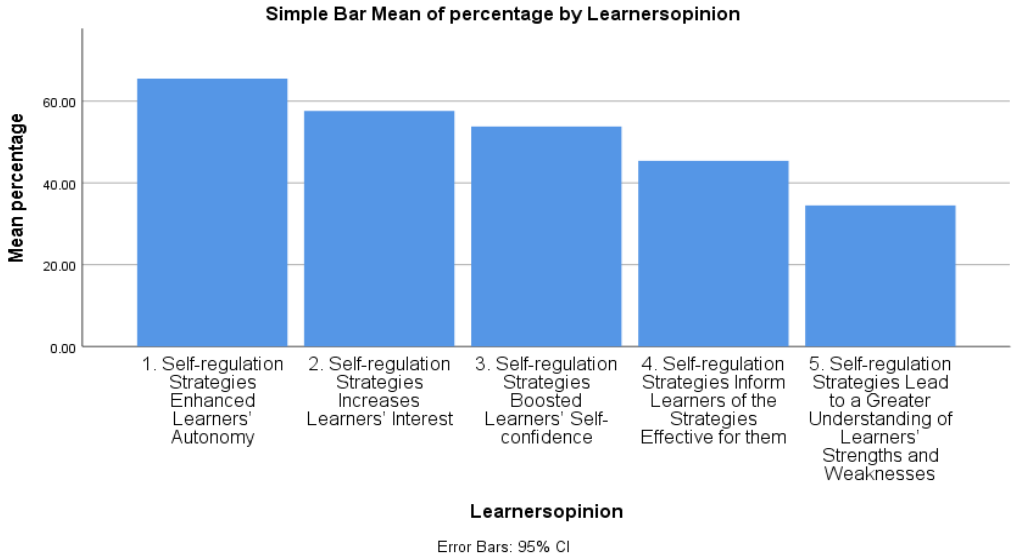

Figure 2
Learners' Extracted Themes

The following section presents the most frequently raised themes along with their representative interview excerpts:

Self-regulation Strategies Enhanced Learners' Autonomy

Based on the responses, learners mostly believed that self-regulation strategies give rise to their autonomy. They perceived self-regulation strategies to be a factor in prompting learners to play significant roles in the learning process. Self-regulation strategies necessitate learners to be independent, aiding them to effectively deal with challenging situations and take responsibility for their success/failure.

Excerpt 1

Self-regulation strategies make you more independent. You will take the responsibility for

your learning, understand your goals, and see why you, for example, listening to this text.

Excerpt 2

During the course I felt that in this method we had important roles in choosing everything in the class.

Self-regulation Strategies Increases Learners' Interest

According to the results, learners frequently considered self-regulation strategies as factors which enhance their interest in learning. They claimed that self-regulation strategies provide a milieu in which they can enjoy learning, keep learners motivated, and add varieties to learning. Learners indicated that in this type of instruction, learners' needs came first and their wants were prioritized which increased their interest.

Excerpt 3

I really enjoyed this kind of learning. I decided every aspect of the learning process and my own tastes were considered.

Excerpt 4

Engaging in such instructions helps you continue learning with enthusiasm and motivation, which results in accomplishing more tasks.

Self-regulation Strategies Boosted Learners' Self-confidence

The analysis showed that self-regulation strategies build learners' self-confidence up and assign active roles to them in the learning process. Participants stated that they monitor, control, and regulate different aspects of the learning process as well as the learning context which developed their self-confidence. Also, self-regulation strategies had the potential to bring about positive changes in their attitudes towards the tasks.

Excerpt 5

I'll be more confident and braver if I do things on my own, without help.

Excerpt 6

I can approach different tasks with more positivity since the strategies make me feel better.

Self-regulation Strategies Inform Learners of the Strategies Effective for them

Participants argued that the implementation of self-regulation instruction help learners to diagnose the effective strategies that mostly suited them. In fact, self-regulation instruction could translate into the students' effective use of the desired strategies to take care of problematic situations in the learning process. Moreover, self-regulation instruction will contribute significantly to enhancing the students' knowledge and awareness regarding their weaknesses. Consequently, they will be able to center their attention on those areas of difficulty and attempt to resolve them successfully.

Excerpt 7

When you follow self-regulation strategies, you stand on your own feet. By finding your own mistakes, you understand which areas need more practice. For example, if I have problems with reading, I'll work on that.

Excerpt 8

When you use self-regulation principles, you have more knowledge about yourself. You understand which grammatical points and vocabulary in reading are harder to study them more.

Self-regulation Strategies Lead to a Greater Understanding of Learners' Strengths and Weaknesses

Another point which learners frequently mentioned was the contribution of self-regulation to learners' greater understanding of their strengths and weaknesses. They indicated that adopting active roles in learning process helped them achieve a better understanding of themselves and discern areas of strengths/weaknesses.

Excerpt 9

Self-regulation strategies make your autonomous. So, you won't need teachers around the clock in all situations. If you practice self-regulation, you understand which strategies are better for you when learning.

Excerpt 10

Self-regulation instruction assists students in identifying weaknesses and how to overcome challenges in learning specific tasks.

DISCUSSION

The study explored the value of self-regulation instruction in boosting Iranian EFL learners' L2 motivational self-system and reinforcing reading comprehension ability. The findings showed

the contribution of self-regulatory strategy instruction to learners' L2 motivational self-system, leading to an enhancement in EFL learners' ideal L2 self, ought to L2 self, and attitude to L2 learning.

Research demonstrates that students receiving training in self-regulation processes including goal setting, self-reflection, and self-monitoring manifest high levels of motivation and achievement (Schunk, 1996). The findings in this study reflect earlier studies suggesting self-regulated learners display higher levels of motivation (Perry et al., 2006), and that disability to self-regulate one's learning diminishes motivation (Aksan, 2009). The data obtained also corroborate previous research revealing that motivation for both L1 reading (James, 2012) and EFL reading (Ferreira & Simão, 2012) was promoted as a consequence of self-regulation.

Self-regulated learners are tenacious on their attempts for better learning and shifting their strategies if required. These students embark on the learning process by determining their goals, selecting proper strategies, and taking charge of their own programs. Self-regulated learners possess a collection of cognitive strategies that they can skillfully use to do different academic tasks, including organizational, rehearsal, and elaboration strategies (Alexander et al., 1998).

Furthermore, self-regulated learners are metacognitively skilled regarding their awareness and use of cognitive strategies (Butler & Winne, 1995). These students enjoy extensive metacognitive knowledge about learning strategies in particular, and learning process in general (Zimmerman, 1986). Students who use self-regulation strategies attempt to make the information meaningful or provide reasonable connections with the former information. Students also strive to manage this process, create suitable learning environments, and improve their academic performance. In other words, these students are aware of the quality of their learning as they use metacognitive techniques (self-questioning, self-control, and self-assessment). They accomplish academic achievements through trial and error, enjoy the difficulties of excuses, employ effective learning strategies, and regulate goals.

The findings of ANCOVA demonstrated that EFL learners' reading comprehension improved after they received self-regulation strategies instruction. This result is consistent with most frameworks of self-regulated learning, which indicated positive relations between self-regulated learning and academic achievement (Abar & Loken, 2010). The results support Zimmerman's (2000) model of self-regulation and its teachability in conjunction with the development of language abilities in EFL contexts.

The findings indicated that employing systematic regulatory approaches, individuals can adjust routines by actively specifying which temperaments and methods are most suitable for accomplishing desired performance outcomes. Therefore, self-regulation can be the difference between mediocre performance and excellence, leading Wigfield and Eccles (2001) to argue that self-regulation is one of the major ways in which individuals transfer motivation into achievement.

The findings support that self-regulation instruction helps language learners plan, organize, and assess learning, and makes them autonomous, self-sufficient, and cognizant of their learning processes. Learners' identification of effective strategies, contemplation of how to solve tasks, and assessment of progress facilitate learning and make it persistent. Cognizance of how to utilize strategies increases language proficiency and leads to better language learning outcomes.

The thematic analysis of learners' responses to interview questions supported the results of quantitative analysis, with students promoting positive attitudes towards self-regulation instruction. Self-regulation instruction was a novel experience for all learners. Learners were specifically pleased with the format, structure, and design of instructional materials. Active involvement and autonomous language learning were the remarkable characteristic of this kind of language learning. They maintained that self-regulation instruction added variety to the process of language learning and increased learners' interest. These can be attributed to the significance of emotions for Iranian EFL students and their desire to self-regulate their

learning process. Another justification can be the EFL context of Iran in which the resources for learning English is not as much as ESL contexts, which makes students more inclined to work autonomously.

Furthermore, the participants demonstrated that the self-regulation instruction fostered their confidence and enabled them to become more active, independent learners. They argued that self-regulation instruction informed learners of the strategies effective for them and led to a greater understanding of their strengths and weaknesses. These findings are attributable to the interconnected nature of psycho-emotional factors in learner-psychology in that self-regulation facilitates the ground for the development of autonomy, motivation, and a high sense of self-confidence. Overall, enhanced autonomy was the most frequently reported benefit of implementing self-regulation instruction. It was also advantageous to the learners since it raised their interest, boosted their self-confidence, and led to a better awareness of their strengths and shortcomings.

CONCLUSION

The findings affirmed self-regulation instruction as a potential approach to improve EFL learners' L2 motivational self-system which goes beyond the traditional model of teaching. The cross-validation of the findings with the previous research demonstrated that self-regulation instruction is more beneficial than the traditional deductive approach, specifically in the area of L2 motivational self-system.

This study brought about certain implications for language teacher educators, teachers, and materials developers. Teacher education programs not only need to present the current theories of teaching and learning, but also should render prospective teachers' approaches like the self-regulation instruction. The courses for teachers' professional development should promote some programs to prepare teachers how to raise their awareness as to the effectiveness of applying self-regulation instruction approach in classes.

Pedagogically, cognizance of the intricacy of the self-regulation construct and L2 motivational self-system assist teachers in understanding what encourages students to learn foreign languages. As students' implementation of self-regulation strategies results in higher L2 motivational self-system and enhanced reading performance, teachers should take these psychological/cognitive dimensions of students' characteristics into account. EFL teachers can draw upon students' motivational self-systems to encourage them to utilize various self-regulation strategies, which, in turn, make them self-directed and metacognitively involved readers.

The study also provides insights for materials developers to make changes in classroom practices by understanding learners' perceptions of the effectiveness of self-regulation education and taking students' motivation into consideration. Materials developers should gain awareness of integrating self-regulation strategies into the curriculum to strengthen student experience and promote epistemological development.

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