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The effect of strategy-based instruction on motivation, self-regulated learning, and reading comprehension ability of Iranian EFL learning

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Abstract: The current study set out to investigate the effect of strategy-based instruction (SBI) on motivation, self-regulated learning, and reading comprehension ability of Iranian English as a Foreign Language (EFL) learners. To fulfil the purposes of this study, 55 intermediate EFL learners were selected and randomly assigned to two groups including a control and an experimental one. Subsequently, the motivation and self-regulated learning questionnaires and a reading comprehension test were administered to the two groups as pretests. Then both groups underwent the same amount of teaching time (12 sessions) using the *Developing Skills* as a course book. The students in the experimental group also received the instruction of six reading strategies consisting of making connections, predicting, questioning, monitoring, visualizing, and summarizing. Finally, the two questionnaires and the reading comprehension test were administered as the posttests to both groups and the scores were compared using MANCOVA. The results of data analyses revealed that SBI significantly affected reading comprehension, motivation, and self-regulation (SR) of foreign language learners. Teachers are encouraged to employ SBI to enhance learners' reading comprehension, motivation, and SR.

Subjects: Language & Linguistics; Language Teaching & Learning; Literature

Keywords: Strategy-based instruction; motivation; self-regulated learning; reading comprehension

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PUBLIC INTEREST STATEMENT

Learning a foreign language can be made a lot easier if learners get to know how to go around the task of language learning. Thus, to help students learn the language more effectively and efficiently, teachers can teach them some strategies they can use in the process of language learning. In this study, we investigated the role of teaching some of these language learning strategies on improving the reading comprehension, motivation, and the way learners can regulate their learning. The results of the study revealed that teaching language learning strategies enhanced learners' reading comprehension, motivation, and control over the course of their learning. Based on the findings of this study, foreign language teachers should teach learners strategies that they can use to improve their language.

1. Introduction

Life would be very challenging and troublesome for those who lack the ability to comprehend written texts. In the same vein, Fahim and Sa'eepour (2011) maintain that reading has a very important role in L2 curriculum as reading comprehension is considered as one of the main goals set in many educational programs. L2 reading comprehension is viewed as the foundation of instruction in various teaching programs to develop vocabulary, writing, grammar, general language courses, etc. (Mikulecky, 2008). A lot of people grapple with deficiency regarding reading comprehension ability. In the view of Denton, Wolters, York, Swanson, Kulesz, Francis (2014), new statistics results published by National Assessment of Educational Progress show that 22% of students have serious problems comprehending texts at even a basic level. As mentioned by Alber-Morgan, Ramp, Anderson and Martin discussed (2007), learners' problems with reading may emanate from inadequate academic instruction. According to Alber-Morgan et al., the lack of ability to comprehend texts has roots in willingness to read. As discussed by Edmonds et al. (2009), these challenges may be attributable to teachers' misinterpretation that reading a text fluently without any errors equals comprehending it easily. Consequently, these teachers shy away from teaching effective strategies required by learners to figure out the text, instead focusing only on the instruction of the content of the text (Alber-Morgan et al., 2007). Moreover, teachers are not usually willing to enhance their knowledge, avoiding searching recent research related to the approaches that can be useful for identifying learners' comprehension problems and finding solutions for tackling them (Hiebert, Gallimore, & Stigler, 2002).

Teachers may use various solutions in order to eliminate reading comprehension problems. For example, they can support students through equipping them with effective strategies to reduce or solve comprehension difficulties. This would help students to become more self-regulated, and improve their motivation. How the reading strategy use is related to reading comprehension has been the focus of many studies, given that the efficient application of reading strategies can bring multiple benefits to learners regarding their ability to comprehend texts (Al-Nujaidi, 2003; Brantmeier, 2000; Lee, 2007). According to Brantmeier (2002), reading strategies are defined as the comprehension processes used by readers to make sense of what they read. In fact, they are viewed as approaches, actions, and procedures individuals use to enhance their reading comprehension. As Lee (2007) says, closely related to the concept of strategies is self-regulation (SR).

According to Allen (2003), the three models of Reciprocal Teaching Approach (RTA), Transactional Strategy Instruction (TSI), and the Cognitive Academic Language Learning Approach (CALLA) are the most effective models of reading strategy instruction. Annemarie Palinscar and Ann Brown in 1980s first developed the RTA (Palinscar & Brown, 1986). The RTA emphasizes the role of group work in teaching. This model contributes to learners' comprehension of texts, development of SR, monitoring skills, and motivation (Borkowski, 1992). TSI was developed by Michael Pressley which encourages the cooperation between learners and teacher in using strategies to comprehend texts. In this model, teacher's ideas are not ignored but students' needs and comprehension determine teachers' instructional activities. In other words, when the discussions and activities are beneficial for the learners, teachers may not change them even though they have not been previously planned. The CALLA designed by Anna Chamot and J. Michael O'Malley was inspired by their interest in research on L2 learning strategies. Their research led them to focus on giving awareness to foreign language learners learning strategies so that they would be better language learners. Chamot and O'Malley found that successful learners were different from unsuccessful learners in choice of strategies and coordinating them for completing language tasks (Chamot & O'Malley, 1994). There are some commonalities between the three approaches to instruction. All the three approaches emphasize strategies, awareness of cognitive and metacognitive strategies, and cooperative learning. Additionally, these approaches encourage explicit instruction and modeling of strategies (Allen, 2003).

To be better learners, learners need to identify their own learning strategies and make an assessment of their learning (Metallidou & Vlachou, 2007). In other words, they should self-

regulate their own learning and thus assuming more responsibility in the process of L2 learning. According to Zimmerman (2000), SR is the extent to which students take control of their learning process as well as the achievement of their goals. This requires the students to have motivational, behavioral, and cognitive engagement. Wolters (2003) characterizes SR as a kind of process which has to do with one's monitoring, management and control of factors including cognition, motivation, behavior, and environment, with the aim of achieving self-set goals (as cited in Yigzaw & Fentie, 2013, p. 44). Implied by such definition of SR, the concept of SR theoretically is related to the concept of motivation.

The review of literature shows that research on motivation in L2 learning enjoys a long history. In the view of many researchers (e.g. Dornyei, 2001; Warden & Lin, 2000), motivation can be viewed as one of the major factors contributing to the learners' success in the context of a second or foreign language. Similarly, Ely (1986), Spolsky (1989), Scarcella and Oxford (1992) claim that motivation plays an essential role in L2 learning as it influences how much effort learners make, how often learners make use of L2 learning strategies and how well they do on the achievement tests and develop their L2 skills. Deci and Ryan (1985) believe that there should be different types of motivation because various reasons and goals provide us the force to do certain actions. Deci and Ryan (1985) developed the self-determination theory that is considered as one of the most influential motivation theories. Based on this theory, people are motivated to do things based on their internal desires. In fact, true motivation comes is intrinsic in contrast to extrinsic motivation. Another influential theory of motivation is expectancy-value theory that bases motivation on people's perceptions of their chances of success (Eccles & Wigfield, 2002). In other words, in expectancy-value theory, people are motivated to do things that they find themselves capable of doing.

Motivation is also considered the prerequisite for SR (Rieser et al., 2016; Zimmerman, 2000). It would seem unrealistic to expect a student to self-regulate their English studies without having adequate motivation for second-language learning. Self-regulation is highly valued in second-language acquisition as it allows less dependence on teacher and more autonomy in learning. Self-regulation theory posits that students need to learn strategies to set their goals, monitor their progress, adjust their learning efforts, take control of their learning, and finally achieve their goals (Hattie, 2012; Sautelle, Bowles, Hattie, & Arifin, 2015). Wiliam (2011) emphasizes the advantages of SR and considers it a criterion for success. Wiliam (2011) adds that self-assessment is part of SR which is a problem for students. Self-assessment allows students to constantly check their progress toward the goals and accordingly adjusts their learning strategies. In order to self-regulate, learners need to make use of different strategies to plan, evaluate, set goals, and keep themselves cognitively and emotionally engaged to achieve goals (Sautelle et al., 2015; Wiliam, 2011). Therefore, strategy-based instruction (SBI) may help the L2 learners achieve more SR by instructing them how to use reading strategies to better manage their reading comprehension.

In sum, the main issue the current study aims to address is the efficacy of SBI in enhancing the reading comprehension of Iranian EFL learners. However, this efficacy is operationalized not only in terms of reading comprehension improvement, but also from SR and motivation perspectives. Literature suggests that SR and motivation are the elements of independent learning. Currently, independent learning or more conveniently autonomous learning is highly emphasized in second-language acquisition as autonomous learning further illuminates the issues of assessing teaching techniques in terms of boosting SR and motivation. Since the decline of method era in second-language acquisition, teacher education has emphasized the role of flexibility and contextual learning. Flexibility and contextual learning allow teaching techniques that are less predetermined and provide teachers with freedom in choosing techniques to be more in line with the expectations of the target students. One of these lines of teaching techniques that have gained tremendous popularity is SBI. Accordingly, the present study aimed at investigating the effect of SBI on motivation, self-regulated learning, and reading comprehension ability of EFL learners. Therefore, the current study aimed to find answers to the following research questions:

Q1: Does SBI affect the reading comprehension of Iranian EFL learners significantly?

Q2: Does SBI affect the self-regulated learning of Iranian EFL learners significantly?

Q3: Does SBI affect the motivation of Iranian EFL learners significantly?

Accordingly, the following null hypotheses were formulated:

H0₁: SBI does not affect the reading comprehension of Iranian EFL learners significantly?

H0₂: SBI does not affect the self-regulated learning of Iranian EFL learners significantly

H0₃: SBI does not affect the motivation of Iranian EFL learners significantly

2. Method

2.1. Participants

For the purpose of this study, 90 female intermediate EFL learners aged above 18 years from a Language School in Sanandaj were selected based on convenient sampling. Following their performance on a sample Cambridge ESOL PET, 55 of them whose scores fell within the range of ± 1 standard deviation from the mean were chosen and randomly assigned to an experimental and a control group (25 in the control and 30 in the experimental). There were also 30 participants with almost the same language proficiency background as the 90 learners mentioned above who sat for the piloting of the tests.

The researcher as the teacher of the two groups and another colleague served as the raters who scored the writing sections of the PET during the research process. The raters had 5 years of experience in teaching EFL.

3. Instrumentations and materials

The instruments and materials used for the purpose of this study are provided in the following sections:

3.1. Preliminary English Test (PET)

A sample PET was administered for the participant selection process. The test covers all the four language skills of reading, writing, listening, and speaking. PET is part of a group of examinations developed by Cambridge ESOL called the Cambridge Main Suite. The Main Suite consists of five examinations which have similar characteristics but are designed for different levels of English language ability. Within the five levels, PET is at level B1 (Threshold) in the Council of Europe's Common European Framework of Reference for Languages: Learning, teaching, and assessment. It has also been accredited by the Qualifications and Curriculum Authority in the UK as an Entry Level 3 ESOL certificate in the National Qualifications Framework.

PET consists of three parts including reading and writing (paper 1), listening (paper 2), and speaking (paper 3). The first paper (reading and writing) takes 1.5 h. The reading part consists of five parts (35 questions) which test different reading skills with a variety of texts, ranging from very short notices to longer continuous texts. The test's focus in this part is the assessment of candidate's ability to understand the meaning of written English at word, phrase, sentence, paragraph, and whole text level. Each of the questions in the reading part carries one mark so that this section comprises 25% of the total mark for the whole examination.

The writing section comprises three parts which test a range of writing skills. The test's focus here is the assessment of candidates' ability to produce straightforward written English, ranging from producing variations on simple sentences to pieces of continuous text. The section consists of eight questions. Questions 1–5 carry one mark each. Question 6 is marked out of five; and 7 and 8 are marked out of 15. This gives a total of 25 which represents 25% of the total mark for the whole examination.

Paper 2 (listening) allows 30 min. This part consists of four parts ranging from short exchanges to longer dialogues and monologues which will be heard by students two times. The test focus in this section is assessment of candidates' ability to understand dialogues and monologues in both informal and neutral settings on a range of everyday topics. This part has 25 questions. Each item carries one mark. This gives a total of 25 marks, which represents 25% of the total mark for the whole examination.

The last paper which is speaking lasts for 10–12 min per pair of candidates. It has four parts. In first part, candidates interact with an examiner. In parts two and four, they interact with another candidate and in part three, they have an extended individual long turn. The test focus of the speaking part is assessment of candidates' ability to express themselves in order to carry out functions as threshold level, to ask and to understand questions, to make appropriate responses, and to talk freely on matters of personal interest. Candidates are assessed on their performance throughout the test. There are a total of 25 marks in this paper, making 25% of the total score for the whole examination. The speaking section of the PET was not administered in this study (piloting and main administration) due to practicality reasons. The results of the pilot study showed that reading and listening sections had reliability indices of 0.85 and 0.86, respectively.

3.2. Rating scale for the PET writing part

For the assessment of parts two and three of the writing section, the researcher used the PET general mark scheme which is used as a rubric for a summative score. According to the PET rating scale, the criteria include language range, variety, complexity message communication, grammatical structure, vocabulary, spelling, punctuation, content points, length, and target reader and the maximum overall score is 5. In the pilot study, the inter-rater reliability of PET writing was found 0.85.

3.3. Reading pretest and posttest

The scores of the reading section of the PET, which was used for homogeneity purposes were also used as the reading pretest and a reading section from another version of the PET was used as the reading posttest. The reading test each had five parts with a total number of 35 questions showing that you could read and understand the main points from signs, newspapers, and magazines, and could use vocabulary and structure correctly.

4. Foreign language motivation questionnaire

The current study used a foreign language motivation questionnaire developed by Taguchi, Magid, and Papi (2009), which is modified for the Iranian context. Thus, the Persian-translated version of this questionnaire was used in this study. The questionnaire had already been translated into Persian by Taguchi et al. (2009), with its reliability reported to be .83 and thus at a satisfactory level. According to Taguchi et al., the questionnaire was devised by drawing on Dornyei, Csizer, and Nemeth's (2006) study while the original version of the questionnaire was written in Japanese language, which have been piloted on 345 students in Japan. According to the authors of this questionnaire, the reliability index of the questionnaire in Japanese English-language teaching context is .78, which is considered as an acceptable level of reliability. The Japanese version of this questionnaire was then modified for use in China and Iran for Taguchi et al.'s research.

The questionnaire makes use of a 6-point Likert scale, made up of two sections. The first section consists of statement type while the items in the second section consist of question type formats. In total, there are 76 items. The format of this questionnaire is a 6-point Likert-scale, with the following options: strongly disagree, disagree, to some extent disagree, to some extent agree,

agree, and strongly agree in Part One and no/not at all, not a lot, have no feeling, to some extent yes, yes a lot, and yes very much for Part Two. The students' scores are obtained through adding up the scores from both parts. Consequently, the scores range from 76 to 456. This questionnaire has been piloted several times, yielding a satisfactory level of reliability (Dornyei, 2010). Taguchi et al. have reported the reliability indices of the questionnaire (.78, .81, and .83 for the Japanese, Chinese, and Iranian contexts, respectively). Given that reliability is sample dependent, this questionnaire was test-piloted on a sample of 30 Iranian EFL learners, who have similar characteristics to those of the original participants. The reliability was assessed through running Cronbach's Alpha and was found 0.82.

4.1. Self-Regulation Questionnaire (SRQ)

The SRQ employed in the current study was written by Brown, Miller, and Lawendowski (1999). This instrument is a 63-item instrument whose items were devised with the aim of making each of the seven subprocesses, forming seven rationally derived subscales of the SRQ. Each subscale consists of nine items, and it has been recommended to use the total sum score to estimate the SR capacity. The students in the study responded to the items by choosing one of the five options, namely, from a score of 1 to a score of 5 on a Likert-type scale, ranging from strongly disagree to strongly agree. It is claimed that the scores above 239 show high level of SR, scores ranging from 214 to 238 are indicative of intermediate level of SR, and scores below 213 indicate low SR level. In the view of Aubrey, Brown, and Miller (1994), the SRQ enjoys a very high reliability. The SRQ was administered twice by them to students (the second administration after 48 h). The results indicated the test-retest reliability index of .94, $p < .0001$, which supports the reliability of the instrument. The results of the pilot study in the current study indicated that SRQ had a reliability index of 0.78.

4.2. Course book

The same course book—*Developing Skills* (by L. G. Alexander)—was used in both classes. It is an integrated course for intermediate and pre-intermediate students. It is the third volume of the *New Concept English* series which has four books. Each of the four books can be used independently. *Developing Skills* has three units each of which including 20 passages. Twenty-eight passages will be covered during this semester, two passages per session, so all passages from unit one and eight passages from unit two are practiced.

5. Procedure

In order to achieve the objectives of this study, the researcher went through the following procedures: As the first step, the researcher piloted the sample PET test among a group of 30 students with almost similar language features of the main group. Then, the test was administered to 90 participants at the intermediate level and only those whose scores lay within the range of ± 1 standard deviation from the mean were selected as the homogeneous participants of the study. Based on this procedure, 55 learners were selected and divided into an experimental and a control group.

Next, the SR and motivation questionnaires were administered to the participants in the two groups and the scores were considered as pretest scores. The scores of the reading comprehension section of PET used for homogeneity purposes were also used as the reading comprehension pretest scores. The course comprised 14 sessions of 105 min 2 days a week and to control for teacher's effect the control and experimental groups were taught by the researcher. An average of 45 min was devoted to reading each session for both groups. Both groups received exactly the same reading materials; however, the experimental group was exposed to treatment, i.e. reading strategy instruction.

In the control group, the main focus was on teaching the meaning of words, explaining grammatical points, and answering the comprehension questions following each passage. The activities all aimed at enhancing the students' knowledge of language in order to help them with reading and understanding the passages under instruction. In the control group, there was no practice in teaching reading strategies. The textbook used to teach reading was *Developing Skills*. Every session, students were asked to read the two texts assigned and also answer the

comprehension and grammar exercises related to those passages before coming to the class. In the class, first the exercises were checked and then a student was asked to read aloud the passage and the teacher elaborated on the structural complexities and explained the meaning of expressions.

In the experimental group, the same teaching procedure was practiced; however, the participants were exposed to reading strategies instruction. According to the New South Wales Department of Education, there are “Super Six” Comprehension Strategies, which are Making connections, Predicting, Questioning, Monitoring, Visualizing, and Summarizing. The participants in the experimental group received instruction for the super six reading strategies. To this aim, every two sessions, one strategy was taught to the students explicitly. The explicit instruction was performed as follows:

- First, the teacher explained what the strategy was and why that strategy was useful and necessary to comprehension.
- Second, the teacher modeled the strategy, i.e. he read a section of the text aloud and used a Think Aloud and a Visual (symbol, chart, etc.) to share ideas with students. Think Aloud involved orally explaining precisely what is triggering thoughts and how it is affecting understanding.
- Third, the next section, the text was read and students were asked to work with a partner to apply the new strategy. Then, the responses from paired students were discussed and another section of the text was read aloud.
- Afterwards, the teacher monitored the students as they worked independently.
- Finally, the students reflected on how using the strategy helped them to understand a text.

At the end of the treatment, the motivation and SR questionnaires were given to the two groups. Moreover, a reading test from another version of PET was also given to the participants as the posttest of reading.

It should be noted that to observe ethical considerations, the researcher briefed all the participants concerning the purposes of the study and aims of data collection. Moreover, the participation of the individuals in the study was completely voluntary and the participants were assured that the scores of the tests and questionnaires would be used only for research purposes.

6. Results

The statistical test used in the study for reaching the answers to the research questions was MANCOVA. MANCOVA is a parametric test and in the first step it requires that data be normally distributed. Therefore, before embarking on the actual analysis, first, the normality of data was examined using Kolmogorov–Smirnov test of normality. Table 1 shows the result of Kolmogorov–Smirnov test of normality on reading, motivation, and SR scores before and after treatment.

In Table 1, it is seen that all the significant values related to motivation, SR, and reading comprehension in both control group and experimental group either before or after treatment were above the significant level of 0.05. Accordingly, all the data of the study were normally distributed. The research questions sought the effect of SBI on reading comprehension, motivation, and SR. SBI was introduced to the experimental group and accordingly comparisons between control group and experimental group in each variable could lead to the answers to the research questions. The method of analysis was MANCOVA which could allow comparisons on several dependent variables while taking account of pretest scores. However, MANCOVA is a robust test that requires several assumptions before being run. The assumptions are linearity of the relationship, normality of data, homogeneity of variances, and multicollinearity. Before presenting the result of MANCOVA, each of the assumptions is checked and presented. Previously, the test of Kolmogorov–Smirnov test of normality indicated all the data were normally distributed. However,

Table 1. Result of Kolmogorov–Smirnov test of normality on reading, motivation, and SR scores before and after treatment

	Groups	Kolmogorov–Smirnov		
		Statistic	df	Sig.
Motivation Pre	Experimental	.069	30	.200*
	Control	.107	25	.200*
Regulation Pre	Experimental	.084	30	.200*
	Control	.113	25	.200*
Reading Pre	Experimental	.102	30	.200*
	Control	.107	25	.200*
Motivation Post	Experimental	.102	30	.200*
	Control	.113	25	.200*
Regulation Post	Experimental	.079	30	.200*
	Control	.121	25	.200*
Reading Post	Experimental	.129	30	.200*
	Control	.123	25	.200*

^aLilliefors Significance Correction.

*This is a lower bound of the true significance.

in case of MANCOVA, we need to check multivariate normality too which is normally examined by checking Mahalanobis distance value against a critical value (Pallant, 2010). Table 2 shows the residual statistics containing the Mahalanobis distance, and Figure 1 shows the critical values for up to 10 dependent variables.

In Table 2, the row labeled Mahal. Distance has maximum value of 13.46 which is smaller than the critical value of 16.27 (in Figure 1 the critical value for three dependent variables is 16.27). According the multivariate normality assumption was met. The next assumption was linearity which was checked using scatter plots of the data. Figure 2 shows the scatter plots of the data.

Table 2. Residual statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	.6195	2.0689	1.4545	.49769	55
Std. Predicted Value	-1.678	1.234	.000	1.000	55
Standard Error of Predicted Value	.013	.037	.019	.005	55
Adjusted Predicted Value	.5419	2.0723	1.4534	.49991	55
Residual	-.09326	.38053	.00000	.06947	55
Std. Residual	-1.305	5.323	.000	.972	55
Stud. Residual	-1.372	5.841	.008	1.041	55
Deleted Residual	-.10310	.45813	.00117	.07988	55
Stud. Deleted Residual	-1.384	10.050	.086	1.524	55
Mahal. Distance	.699	13.460	2.945	2.508	55
Cook's Distance	.000	1.739	.040	.234	55
Centered Leverage Value	.013	.249	.055	.046	55

Dependent Variable: Groups.

Figure 1. Critical values for up to 10 dependent variables (Pallant, 2010).

Number of dependent variables	Critical value	Number of dependent variables	Critical value	Number of dependent variables	Critical value
2	13.82	5	20.52	8	26.13
3	16.27	6	22.46	9	27.88
4	18.47	7	24.32	10	29.59

Figure 2. The scatter plots of the data.

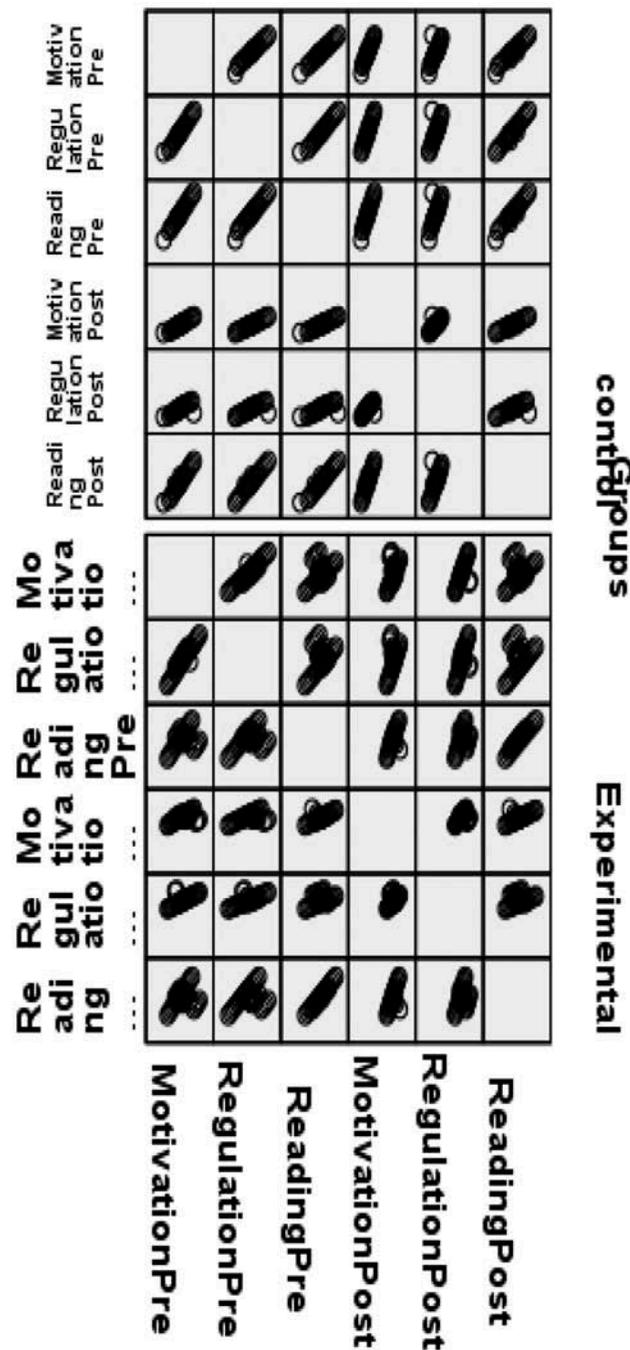


Table 3. Correlations matrix of the dependent variables

		Regulation Post	Reading Post	Motivation Post
Regulation Post	Pearson Correlation	1	.129	.143
	Sig. (two-tailed)		.350	.298
	N	55	55	55
Reading Post	Pearson Correlation	.129	1	.598**
	Sig. (two-tailed)	.350		.000
	N	55	55	55
Motivation Post	Pearson Correlation	.143	.598**	1
	Sig. (two-tailed)	.298	.000	
	N	55	55	55

**Correlation is significant at the 0.01 level (two-tailed).

Table 4. Box's test of equality of covariance matrices

Box's M	F	df1	df2	Sig.
47.990	7.499	6	1.856E4	.132

In Figure 2, there was no sign of nonlinearity; therefore, the assumption of linearity was met. The last assumption was the assumption of multicollinearity which requires that there should not be strong correlation between the dependent variables. To check this assumption, Pearson correlation was run to detect any strong relationship between the dependent variables. Table 3 shows the result of Pearson correlation between the dependent variables.

As seen in Table 3, the correlation values did not exceed 0.90 which indicates that there is no multicollinearity (Tabachnick & Fidell, 2012). The last assumption, homogeneity of variances, was checked by employing Box's test of equality of covariance matrices. Table 4 shows the result of Box's test of equality of covariance matrices.

Box's test of equality of covariance showed that the variances of the variables were homogeneous ($F = 7.49$ analysis, MANCOVA was run to compare the control and experimental groups on the dependent variables, $p > 0.05$); therefore, the assumption of homogeneity of variances was satisfied. In next step, the main output of MANCOVA was checked to find the answers to the research questions.

The result of MANCOVA (Table 5) indicated that there was a significant difference between experimental group and control group. In other words, the result of Wilks' Lambda in the row of *Groups* (see Table 5) indicated that the difference between control group and experimental group in terms of motivation, SR, and reading comprehension was significant ($F = 49.09$, $p = 0.00$). Therefore, SBI had significant effect on motivation, reading comprehension, and SR of the learners. In order to determine which of the dependent variables was significantly affected by SBI, pairwise comparisons were made between the groups in each dependent variable. Table 6 shows the result of pairwise comparisons using Bonferroni method.

As seen in Table 6, comparisons between control group and experimental group were significant in all the dependent variables ($p \leq 0.05$). Therefore, it can be concluded that SBI had a significant effect on motivation, SR, and reading comprehension of the language learners.

7. Discussion

The purpose of the study was to understand how SBI affect the foreign language motivation, SR, and reading comprehension in Iranian EFL learners. The results indicated that SBI significantly

Table 5. MANCOVA output

Effect	Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Groups	Pillai's Trace	4.909E2a	3.000	48.000	.000	.968
	Wilks' Lambda	4.909E2a	3.000	48.000	.000	.968
	Hotelling's Trace	4.909E2a	3.000	48.000	.000	.968
	Roy's Largest Root	4.909E2a	3.000	48.000	.000	.968

Table 6. Results of Bonferroni pairwise comparisons

Dependent Variable	(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference ^a	
						Lower Bound	Upper Bound
Motivation Post	Experimental	Control	26.557*	.726	.000	25.099	28.015
	Control	Experimental	-26.557*	.726	.000	-28.015	-25.099
Regulation Post	Experimental	Control	14.994*	6.568	.027	1.801	28.187
	Control	Experimental	-14.994*	6.568	.027	-28.187	-1.801
Reading Post	Experimental	Control	2.958*	.232	.000	2.491	3.424
	Control	Experimental	-2.958*	.232	.000	-3.424	-2.491

Based on estimated marginal means.

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

^aAdjustment for multiple comparisons: Bonferroni.

affect foreign language motivation, SR, and reading comprehension among Iranian EFL learners. Here in this section, the results are discussed by proposing explanations for the results and comparing and contrasting them with previous studies.

The fact that SBI positively affects the language learners' reading comprehension is consistent with the research corroborating the positive role of L2 learning strategy (Dreyer & Oxford, 1996; Green & Oxford, 1995; Griffiths, 2003, Kyungsim & Leavell, 2006; Park, 1997; Yang, 2009). Reading strategy use is positively correlated with reading comprehension (Davis, 2010; Khosravi, 2000; Salataci & Akyel, 2002; Shokrpour&Fotovatian, 2009; Wright & Brown, 2006). The study conducted by Barnett (1988) showed that those readers who decided to use certain strategies outperformed those who did not use reading strategies in terms of reading comprehension. Moreover, those who perceived they made use of generally considered effective strategies could understand more than those who did not.

That SBI positively influenced motivation can be attributed to the role of SBI in reinforcing self-efficacy and confidence among L2 learners. A strategic reader may read more goal oriented and effectively that would consequently affect the sense of achievement and success in L2 readers. One of the dimensions of motivation is how people attribute their success to themselves. According to attribution theory, learners' past experience serve as a connecting link to motivation for certain activities. Regarding L2 learning, the frequency of failure is high. Consequently, attribution theory has an important role in L2 learning motivation (Dörnyei, 2008). The SBI gives the learners an opportunity for higher achievement in reading comprehension. This can reinforce L2 learners' self-efficacy as well as their willingness to be more active in L2 learning generally and learning reading specifically. Margolis and McCabe (2006) claim that by improving self-efficacy beliefs, L2 learners can be more motivated to learn. In the same vein, McDonough (2005) notes that motivation can be improved through promoting the self-confidence and self-esteem. Besides the theoretical explanations, empirical studies also show the relationship between the motivation and language learning strategies. Nikoopour, Salimian, Salimian and Amini Farsani (2012) examined the motivation and L2 learning strategies employed by Iranian Language Learners. The findings showed a significant positive relationship between intrinsic motivation and cognitive/metacognitive strategies.

Motivation can be claimed an important element in second-language acquisition to the extent that enhancing motivation is considered one of the goals of foreign language curriculum. Although motivation is a complicated construct and there are different forms of motivation, educators always consider instruction materials and techniques to be interesting and motivating. The current study showed that motivation in L2 learners are increased after SBI which is a positive finding. It was discussed how motivation can be affected by SBI in terms of theory which is both a confirmation of motivation theories like expectancy-value theory and attribution theory and also a ground to justify the relationship between motivation and SBI. However, this relationship has practical side too which encourages the application of SBI in second-language learning. By adopting SBI in L2 reading classes, teacher may achieve two goals simultaneously: (1) boosting motivation and (2) enhancing reading comprehension.

The study showed that SBI affects SR in Iranian L2 learners. The features of strategies and definition of SR clarify how the two are related as well as how strategy instruction influences SR. The L2 learning strategies can be used to cope with L2 learning problems and challenges. On the other hand, SR deals with learners' efforts to take control of learning process (Hattie, 2012; Sautelle et al., 2015) that is in line with the purpose of SBI. The strategies make it possible for the learners to plan and monitor their progress. Accordingly, L2 learners can adopt different types of strategies including memorizing, summarizing, seeking help from peers, self-motivating, etc. in order to self-regulate their L2 learning. Pintrich (2000) characterizes SR as an active constructive process through which L2 learners set their learning goals and then make an attempt to monitor, regulate, and control their cognition, motivation and behaviour. These are directed and

constrained by their goals as well as the contextual factors in the environment. Accordingly, L2 learning strategies can be claimed to be achieved through SBI, providing the tools for better SR. Put it other way, strategy instruction can be considered as a way to teach learners how to self-regulate their L2 learning activities.

The results of the study further inform the language teachers about the merits of SBI and how helpful it can be in instructing language skills particularly reading skill. The results of the study encourage the language teachers to take benefits of SBI in boosting the motivation and SR of language learners. By employing SBI, learners can be more autonomous in their language learning efforts because higher motivation and SR pave the way for more autonomous language learning. The above points require that teachers be skilled in delivering SBI. Accordingly, it is suggested that language teacher trainers be ready for preparing the language teachers for SBI if there is an intention of employing SBI in foreign language classrooms. In case SBI is going to be applied in foreign language classroom, materials and textbooks should also get adapted in a way that SBI is facilitated.

8. Conclusion

Based on the results, several conclusions can be drawn. First, it is concluded that SBI is an effective language teaching method particularly for teaching reading comprehension. Second, it can be concluded that SBI brings positive outcomes in several ways. For example, SBI positively affected motivation and SR which are two important goals in education. Motivation and SR can help the learners be more autonomous which would positively affect the learning outcomes. Third, the positive effects of SBI are well supported by previous theories like attribution and achievement theories and also empirical studies on strategy instruction.

The implication of the study is that SBI for the purpose of L2 reading instruction should receive more attention by teachers and curriculum developers. In Iranian context of L2 reading, teachers mainly focus on vocabulary, meaning of sentences, paragraphs, and texts, and reading skills like scanning and skimming. However, more attention should be given to goal-oriented and strategic reading which can be achieved through SBI. Through SBI, L2 learners not only achieve higher comprehension, but they may also self-regulate their learning better and be more motivated in their learning. It should be noted that inclusion of SBI requires harmony between various sections of an education system including teacher training, material development, and assessment. Accordingly, it is suggested that before deciding the full adoption of SBI, enough attention be given to how teachers are going to be trained, how materials are developed or selected and how learning is going to be assessed.

The effectiveness of SBI was established in the current study, but there is still need for further studies to learn how SBI is effective in different contexts of L2 learning. For instance, effectiveness of SBI can be investigated in non-Iranian contexts or in contexts that English is considered a second language rather than a foreign language. The cumulative information from such studies can enlighten us about the effectiveness of SBI in the area of L2 reading. Another issue that seems important and requires investigation is the perceptions of teachers about the efficacy and challenges of SBI for the purpose of teaching L2 reading. Information about teachers' attitudes toward SBI can better help us learn about the challenges or advantages of SBI and its applicability in various context of L2 learning.

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