

Effects of Collaborative Strategic Reading (CSR) on EFL Learners' Reading Comprehension, Reading Motivation, and Metacognitive Awareness

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Abstract

The present study focused on investigating the effects of collaborative strategic reading (CSR) on English as a foreign language (EFL) learners' reading comprehension, second language (L2) reading motivation, and metacognitive awareness. In a quasi-experimental design, 48 Iranian EFL learners were selected from four intact language institute classes. Two classes were considered experimental groups (EGs), and two were regarded as control groups (CGs). Then, all four classes received the three pretests of the study (Reading Comprehension pretest, L2 Reading Motivation questionnaire, and metacognitive awareness questionnaire). Next, the treatment phase of the study began and all the groups received reading comprehension instruction. In the EGs, the teacher conducted the essential elements of cooperative learning through CSR strategies (preview, click & clunk, get the gist, and wrap up). On the other hand, CG learners received traditional reading comprehension classes with no group work. After the treatment, all four groups received the three posttests. The results of three one-way ANCOVAs revealed that CSR was significantly more effective than traditional instruction in improving EFL learners' reading comprehension. In addition, it was found that CSR was significantly effective in improving EFL learners' reading motivation and metacognitive awareness. Language practitioners, materials, and curriculum developers can use the study's findings to consider EFL students' needs and goals in L2 reading.

Keywords: collaborative strategic reading (CSR), reading comprehension, reading motivation, meta-cognitive awareness

Introduction

Reading comprehension happens when the readers interact with the text using their linguistic knowledge and background knowledge to construct meaning (Kintsch, 2005). However, comprehension can be a complicated process for learners of English as a Foreign Language (EFL), especially when they lack the necessary skills to read in a second language (L2). Many L2 adult learners have spent several years learning literacy skills and content knowledge in their first language; nonetheless, many fail to employ these skills when dealing with L2 texts (Walter, 2007). Moreover, it has been claimed that reading involves an interaction of several cognitive and psychological functions of different levels that support the reader to make sense of the text (Kong, 2006). This being so, it is imperative that reading comprehension be considered as a multi-faceted process that involves cognitive abilities, motivation, and knowledge, the text (the wording of the text), and the activity (the purpose of the reading). In other words, reading comprehension is a process of extracting and constructing meaning simultaneously through the reader's involvement and interaction with the text (Snow, 2002).

In this regard, one very interesting strategy that has been suggested by researchers in the realm of EFL reading is Collaborative Strategic Reading (CSR), which is defined as an approach that assists and trains students to apply metacognitive and cognitive strategies in cooperative groups (Boardman et al., 2015; McCown & Thomason, 2014). CSR is an explicit strategy instruction designed to facilitate expository reading

comprehension among EFL learners (Khonamri & Karimababdi, 2015). Through CSR, EFL learners are expected to obtain multiple opportunities to interact with others in the target language, activating their background knowledge, negotiating meaning, and ultimately constructing meaning (Klingner et al., 2012). Given the fact that previous literature on L2 reading comprehension shows that EFL readers fail to transfer their first language (L1) reading strategies to L2 reading (Snow, 2002), and reading motivation and metacognitive awareness can play a critical role in L2 reading success (McNamara & Magliano, 2009), this study aims to investigate the effects of CSR on reading comprehension, reading motivation and metacognitive awareness of Iranian EFL learners.

Review of the Related Literature

The following sections will provide a brief review of the theoretical and empirical literature on the topic in focus of this study.

Reading Comprehension

Esfandiari et al. (2021) argue that reading comprehension is essentially a process in which readers construct meaning by interacting with the text through the combination of prior knowledge and previous experience, information in the text, and the views of readers related to the text. Moreover, McNamara and Magliano (2009) have asserted that reading comprehension is a task of both reader and text factors within a larger social context. Thus, it can be claimed that reading comprehension needs the

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effective integration and arrangement of a lot of lower- and higher-level cognitive and metacognitive processes and skills (Grabe & Stoller, 2011). Accordingly, comprehension breaks can be attributed to many sources and factors; these sources and factors also differ based on the skill levels and the type of L2 reading intervention by EFL teachers (Walter, 2007). Thus, it can be seen in the literature that reading comprehension research is complicated due to varying factors such as students' social and ethnic backgrounds, L2 reading motivation and metacognitive awareness, and attitudes toward reading.

Collaborative Strategic Reading (CSR)

Collaborative Strategic Reading (CSR) is an approach to L2 reading instruction rooted in cooperative learning (Slavin, 2014). CSR is fundamentally a kind of explicit strategy instruction in L2 reading, initially designed to facilitate expository reading comprehension for students with learning disabilities, struggling students, and EFL learners (Klingner *et al.*, 2012). It has been claimed that EFL learners can have multiple opportunities to interact with others in the target language, negotiate meaning, and finally comprehend L2 readings more effectively through CSR. Klingner *et al.* (2015) have defined CSR as a multi-component approach designed to teach students with diverse abilities to use four metacognitive strategies (preview, click and clunk, get the gist, and wrap up) in L2 reading as they work in cooperative learning groups. Moreover, previous literature has shown that CSR has important potential to produce metacognitive awareness and enhance reading comprehension (Fan, 2010) among EFL learners.

Metacognitive Awareness

Metacognition awareness has been defined as awareness of how learners learn, evaluating their learning needs, generating strategies to meet these needs and then implementing them (Habibian, 2015). More specifically, metacognition was defined by Flavell (1976) as "knowledge about cognition and control of cognition" (p. 232). It consists of generally two complementary processes: Metacognitive knowledge and metacognitive regulation. Metacognitive knowledge means one's knowledge of his or her own mental processes. It involves his or her awareness of specific skills, strategies, and resources s/he needs to accomplish a task effectively. Metacognitive regulation has an "executive or regulatory function" (Carrell *et al.*, 1998, p. 5). That is, regulation is one's ability to use self-regulatory strategies to achieve a goal successfully. Previous literature shows that this cognitive process is critical for readers who need to use self-regulatory mechanisms to monitor their reading comprehension and evaluate their reading strategies (Boardman *et al.*, 2015).

A wide range of studies have investigated the effect of metacognitive strategy instruction on EFL learners' reading proficiency and have reported positive results in favor of experimental groups that received explicit strategy instruction in L2 reading (Habibian, 2015). For instance, Klingner and Vaughn (2000) examined the effects of CSR on the reading comprehension of bilingual and EFL students. The results showed the positive effects of CSR on the reading comprehension of the experimental group in the study.

Moreover, Klingner *et al.* (2004) ran a quasi-experimental research implementing CSR in 4th grade classrooms. They offered professional development and support for the teachers and assigned them randomly to five intervention classes with CSR and five comparison classes. The results revealed that students in the treatment condition, who received a good amount and high quality of CSR from their instructors, outperformed control classes on reading comprehension tests.

In another study, Habibian (2015) investigated the potential effects of metacognitive strategy instruction on the reading comprehension of 48 EFL postsecondary students at the University Putra Malaysia. The pretest scores yielded no significant difference between the treatment group ($n = 24$) and the control group ($n = 24$). After 12 weeks of instruction on metacognitive strategies, the participants in the treatment group demonstrated significant gains in reading comprehension and monitoring strategies compared to their peers in the control group.

Musarofah (2020) investigated the influence of collaborative strategic reading (CSR) on EFL students' reading comprehension in narrative text. Musarifagh's study used a quasi-experimental design with 120 participants to collect data through tests of reading comprehension in narrative text in pretest and posttest. The data analysis results showed significant differences between the control class (conventional reading) and the experimental class (CSR). It was, thus, concluded that the use of CSR techniques is more effective in improving reading comprehension of narrative texts.

In a very recent study, Ying and Veerappan (2021) investigated the effect of CSR on the reading comprehension of ESL secondary school students through online teaching. Additionally, they attempted to discover the ESL secondary school students' perceptions of CSR in online teaching. Their results revealed that CSR positively affected ESL secondary school students' reading comprehension. Nonetheless, it was found that CSR significantly improved the students' reading comprehension compared with the traditional teacher-centered approach. The results of the interview further proved that all students held positive attitudes towards CSR.

Research Questions

Given the substantial role of reading skills in L2 learning and the gaps in the ELT literature in the Iranian context in the area of reading motivation and metacognitive awareness, this study aims to answer the following research questions:

1. Does CSR have a significant effect on Iranian intermediate EFL learners' reading comprehension?
2. Does CSR have a significant effect on Iranian intermediate EFL learners' reading motivation?
3. Does CSR have a significant effect on Iranian intermediate EFL learners' metacognitive awareness?

Methodology

Design and Context of the Study

The current study adopted a quantitative quasi-experimental paradigm with a pretest-posttest design. This study aimed to examine the effect of the independent variable, CSR, on Iranian EFL learners' reading comprehension, L2 reading motivation, and metacognitive awareness. Thus, the dependent variables in this study were reading comprehension, L2 reading motivation, and metacognitive awareness. Moreover, it should be mentioned that this study employed a quasi-experimental design in which the study participants were randomly chosen from the intermediate classes of a language institute in Isfahan, Iran. The study was carried out in the Spring Terms of the year 2022.

A quasi-experimental design was justifiable for this study because, as Creswell (2012) states, a quasi-experiment is appropriate for experimental situations in which the researcher assigns, but not randomly, participants to groups because the experimenter cannot artificially create groups for the experiment. Moreover, it involves the manipulation of a dependent variable.

Participants

The participants in this study were chosen from among intermediate male and female Iranian EFL learners, whose ages ranged from 19 to 40, studying English at the intermediate level classes of a language institute in Isfahan, Iran. The learners had already been placed at the intermediate level based on the language school criteria of placement; nevertheless, in order to make sure in more objective terms that the learners were truly homogenous with regard to their English proficiency level, an Oxford Quick Placement Test (OQPT) was administered to four intact intermediate classes. Based on the band score criteria of the OQPT, 48 learners who meet the criteria for placement in an intermediate group were selected as the target participants of the study. The data from the rest of the students who did not meet the placement requirement were excluded from the data analysis.

Table 1
Demographic Background of the Participants

Number of participants	48
Gender	Male & Female
Age	18-40
Level of proficiency	Intermediate
Native language	Persian
Target language	English

Instruments

The following instruments were used in the study to collect the data.

Oxford Quick Placement Test (OQPT)

Oxford Quick Placement Test (OQPT) was administered to select intermediate learners. Oxford University Press and Cambridge ESOL developed the OQPT, a flexible measure of English language proficiency. This test consists of 60 multiple-choice items on vocabulary (30 items) and grammar (30 items), and learners with scores ranging from 0 to 10 are considered beginners; the learners with scores of 11 to 17 are deemed breakthrough; learners with scores of 18 to 29 are considered elementary; Pre-intermediate students have 30 to 39 points; intermediate students have 40 to 47 points; advanced students have 48 to 54 points, and; proficient students have 55 to 60 points. Based on the band scores of OQPT, intermediate learners in the four intact classes of the institute were chosen as the study's participants.

Reading Pretest and Posttests

A researcher-made reading comprehension pretest and a posttest were used in this study at the outset of the research and after the treatment, respectively. The researcher-made reading comprehension tests included 20 multiple-choice items for certain reading passages at the intermediate level of proficiency. The texts and their corresponding comprehension questions were selected from the website *usingenglish.com* which provides free reading comprehension tests for learners of different proficiency levels. It should be noted that the pretest and posttest were piloted with a different class of intermediate learners in the language school before the research began and its validity and reliability were checked. The obtained reliability index for the pretest was .73 and the corresponding index for the posttest was .78. As such, both tests were proven to be reliable instruments; moreover, their validity was checked and confirmed by two PhD holders in teaching English.

Metacognitive Awareness of Reading Strategies Inventory (MARS)

Metacognitive Awareness of Reading Strategies Inventory (MARS) is a 30-item instrument developed by Mokhtari and Reichard (2002) to assess adult EFL learners' metacognitive awareness and control of the strategic processes they use while reading. It includes three strategy subscales or factors: Global Reading Strategies, Problem-solving Strategies, and Support Reading Strategies. Students were required to respond to statements about their use of reading strategies on a 5-point Likert Scale ranging from "I never or almost never do this" to "I always or almost always do this." This questionnaire has been validated by Mokhtari and Reichard (2002); nonetheless, the reliability measures of the questionnaire were checked in this study using Cronbach Alpha (.81), and its validity was ensured by two PhD holders in teaching English.

Adult Motivation for Reading Scale (AMRS)

Schutte and Malouff (2007) developed the Adult Motivation for Reading Scale (AMRS) based on both the reading engagement theory concerning intrinsic and extrinsic motivation to read and

the self-determination theory by Ryan and Deci (2000). The 21-item AMRS includes six items measuring reading avoidance/self-efficacy, three measuring reading for recognition, eight measuring reading as a characteristic of self, and four measuring reading to perform other tasks. Students were asked to respond on a five-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). This instrument was used before and after the treatment to measure the potential differences in the learners' L2 motivational levels in reading. Although Schutte and Malouff (2007) validated this questionnaire, it was again checked for validity and reliability in this study.

Data Collection Procedure

This study aimed to investigate the effects of CSR on reading comprehension, L2 reading motivation, and metacognitive awareness of Iranian EFL learners. As such, to select the intended participants, the Oxford Quick Placement Test (OQPT) was administered to students in four intact intermediate classes from the available intermediate classes of a language institute in Isfahan. Based on the band score criteria of the OQPT, 48 learners who met the criteria for placement in an intermediate group were selected as the target participants of the study. The rest of the learners in the four classes who did not meet the proficiency level criteria remained in the classes and participated in the experiment; however, the data collected from them were discarded in data analysis.

After choosing four intact intermediate classes and ensuring the homogeneity of the participants' English proficiency, two classes were considered experimental groups and two were regarded as control groups. This is because the researcher was not able to randomly select and assign participants to the groups due to limitations in the institute; moreover, two intact classes did not provide the researcher with a sufficient number of students because the average number of students in the target language school is 15 students per class. Thus, two classes functioned as the control group of the study and two classes as the experimental group. It should be noted that the teacher for the control group classes was the same person and another teacher taught both experimental group classes.

After deciding on the grouping, all four classes received the pretests (Reading Comprehension pretest, L2 Reading Motivation questionnaire, and metacognitive awareness questionnaire) of the study in the first two semester sessions. In session one, the participants received the reading comprehension pretest; then, in the second session of the semester, the two questionnaires were administered.

Next, the treatment phase of the study began and all four groups received ten sessions of reading comprehension instruction. The teachers explained the essential elements of cooperative learning in the two classes that formed the experimental groups. They reinforced them during the study to sustain the efficacy of group work. The teacher explained each CSR strategy (preview, click & clunk, get the gist, and wrap up), its importance in facilitating reading comprehension, and when and how to implement it. Next, he modeled each strategy with the students to ensure how it was implemented in the students' group work. The teacher assigned the learners to mixed-ability cooperative groups to allow them to apply CRS. Each student was responsible for carrying out a particular role in his/her group, and these roles changed every session so that all group members would experience a variety of roles. It should be noted that while the participants were working in their cooperative groups, the teacher's role was limited to classroom management, monitoring students' use of CSR strategies, and ensuring that the members of each group were implementing the CSR strategies and roles effectively and accurately.

As for the four strategies (preview, click & clunk, get the gist, and wrap up) undertaken in the treatment phase, it should be noted that previewing was checking the text by examining the titles, pictures, headings, and other text structures and features. This strategy stimulated students' thinking and helped them activate their background knowledge and make predictions about the topic of the text. Click and Clunk involved a self-

monitoring strategy that taught students to monitor their reading and think about what caused their comprehension breakdowns. This metacognitive strategy was designed to help students become aware of when they understand and when they do not understand. As the name suggests, 'get the gist' constituted identifying the main idea in each section of the text. One way to identify the main ideas was to answer questions about who or what the paragraph is about. The 'wrap up' occurred after the reading, by which the students reviewed the text's main ideas and generated different types of questions. Then, they took turns in their groups asking and answering those questions.

On the other hand, the students in the two classes that formed the control groups received no CRS instruction; in other words, they received traditional reading comprehension classes with no group work. They were presented with individual warm-up activities and focused mainly on conventional skimming and scanning techniques ordinarily used in reading comprehension classes.

After the ten sessions of treatment, all four groups received the posttests. In the penultimate session, they were given a reading comprehension posttest, which was similar to the reading comprehension pretest in form and level of difficulty; nonetheless, the content of the posttest was different. Finally, the L2 Reading Motivation and metacognitive awareness questionnaires were administered again to the learners in the last session. It was aimed to compare the pretest scores and posttest scores to ascertain the effectiveness of the treatment.

Results

Reading Comprehension

Since the first research question of the study aimed to figure out whether CSR had a significant effect on Iranian intermediate EFL learners' reading comprehension or not, the posttest scores of the learners in the EG and CG were compared using a one-way ANCOVA.

Table 2

Results of Descriptive Statistics Comparing the Reading Scores of the EG and CG Learners

Groups & tests	N	M	SD	Skewness		Kurtosis	
				Statistic	SD	Statistic	SD
EG reading pretest	25	11.84	1.748	.215	.464	.955	.902
EG reading posttest	25	15.92	1.288	-.602	.464	-.514	.902
CG reading pretest	23	11.78	1.312	.175	.481	1.112	.935
CG reading posttest	23	14.26	1.096	-.117	.481	-.630	.935

Table 2 presented that the EG learners obtained mean scores of 11.84 on the reading comprehension pretest and 15.92 on the posttest. CG learners also improved from a pretest score of 11.78 to the posttest score of 14.26; in order to determine whether

there was a significant difference between the two groups mean scores on the posttest or not, the researcher had to refer to the ANCOVA table (see Table 3).

Table 3

Results of ANCOVA for the Reading Posttest Scores of the EG and CG Learners

Source	Type III SS	df	MS	F	p	Partial eta squared
Corrected model	62.15	2	31.07	37.70	.000	.62
Intercept	64.14	1	64.14	77.81	.000	.63
Pretest	29.18	1	29.18	35.40	.000	.44
Groups	31.80	1	31.80	38.58	.000	.46
Error	37.09	45	.82			
Total	11080.00	48				
Corrected total	99.25	47				

Note. SS = sum of squares; MS = mean square.

Suppose you find the row labeled groups in the leftmost column of Table 3 and read across this row under the Sig. column, you can find the *p*-value, which should be compared with the alpha level of significance (i.e., .05). The *p*-value here was smaller than the alpha level of significance (.00 < .05), which indicates that the difference between the two groups of EG (*M* = 15.92) and CG (*M* = 14.26) on the reading comprehension posttest was statistically significant. Score means that collaborative strategic reading was significantly more effective than traditional instruction in improving the reading comprehension of the EFL learners. However, as was

seen above, these two methods of instruction both caused improvements in the learners from pretest to posttest of reading comprehension.

Reading Motivation

The study's second research question intended to find out whether CSR had a significant effect on Iranian intermediate EFL learners' reading motivation; hence, another one-way ANCOVA was used to compare the reading motivation posttest scores of the learners in the two groups of EG and CG.

Table 4

Results of Descriptive Statistics for the Motivation Scores of the EG and CG Learners

Groups & Tests	N	M	SD	Skewness		Kurtosis	
				Statistic	SE	Statistic	SE
EG motivation pretest	25	50.28	3.155	-.271	.464	-.221	.902
EG motivation posttest	25	65.92	2.998	.013	.464	-.076	.902
CG motivation pretest	23	50.60	4.229	-.246	.481	-.297	.935
CG motivation posttest	23	52.34	4.184	-.211	.481	-.551	.935

Table 4 displays the fact that the EG learners improved from the reading motivation mean score of 50.28 to the reading motivation mean score of 65.92; CG learners also experienced an improvement (from 50.60 to 52.34), though not as large as the

one for the EG learners. To determine whether the difference between the EG and CG learners' posttest scores was statistically significant, the researcher had to check the one-way ANCOVA table (see Table 5).

Table 5

Results of ANCOVA for the Reading Motivation Posttest Scores of the EG and CG Learners

Source	Type III SS	df	MS	F	p	Partial eta squared
Corrected model	2588.82	2	1294.41	266.17	.000	.92
Intercept	98.13	1	98.13	20.17	.000	.31
Pretest	382.21	1	382.21	78.59	.000	.63
Groups	2285.79	1	2285.79	470.02	.000	.91
Error	218.84	45	4.86			
Total	172264.00	48				
Corrected total	2807.66	47				

Note. SS = sum of squares; MS = mean square.

Since the *p*-value under the *sig.* (2-tailed) column and across from the row labeled groups in Table 4 was smaller than the significance level (.00 < .05), it could be concluded that the difference between the reading motivation posttest scores of the EG (*M* = 65.92) and CG (*M* = 52.34) learners was statistically significant.

Metacognitive Awareness

The final objective of the study was to see if CSR significantly affected Iranian intermediate EFL learners' metacognitive awareness. To achieve this aim, the researcher compared the metacognitive awareness posttest scores of the EG and CG learners through another one-way ANCOVA.

Table 6

Descriptive Statistics for Comparing the Metacognitive Awareness Scores of the EG and CG Learners

Groups & tests	N	M	SD	Skewness		Kurtosis	
				Statistic	SE	Statistic	SE
EG MCA pretest	25	70.08	3.882	-.047	.464	1.905	.902
EG MCA posttest	25	86.08	5.430	.080	.464	-.543	.902
CG MCA pretest	23	70.08	5.468	.058	.481	-1.112	.935
CG MCA posttest	23	71.73	5.503	.118	.481	-1.064	.935

Note. MCA = Metacognitive Awareness.

Table 6 presented that the MCA posttest mean score of the EG learners (*M* = 86.08) was more significant than the MCA posttest mean score of the CG learners (*M* = 71.73). The researcher had to

check the *p*-value in Table 7 to see whether this difference was statistically significant.

Table 7

Results of ANCOVA for the Metacognitive Awareness Posttest Scores of the EG and CG Learners

Source	Type III SS	df	MS	F	p	Partial eta squared
Corrected model	3385.18	2	1692.59	168.23	.000	.88
Intercept	31.18	1	31.18	3.10	.085	.06
Pretest	921.53	1	921.53	91.59	.000	.67
Groups	2465.91	1	2465.91	245.10	.000	.84
Error	452.73	45	10.06			
Total	304988.00	48				
Corrected total	3837.91	47				

Note. SS = sum of squares; MS = mean square.

The *p*-value in Table 7 was found to be smaller than the alpha level of significance (.00 < .05), which indicates that the difference between the two groups of EG (*M* = 86.08) and CG (*M* = 71.73) on the MCA posttest was statistically significant. Data implies that collaborative strategic reading was significantly more effective than traditional instruction in improving the metacognitive awareness of EFL learners.

Discussion

The results of the first research question on L2 reading comprehension showed that collaborative strategic reading was significantly more effective than traditional instruction in improving EFL learners' reading comprehension.

Our obtained results on the effectiveness of CSR for improving reading comprehension align with those of other researchers who have also reported the same results (Benlyazid, 2019; Habibian, 2015; McCown & Thomason, 2014; Vaughn et al., 2011). Similar to what Benlyazid (2019) has

argued, our findings showed that if teachers provide students with sufficient time and practice to acquire the CSR strategies before they allow students to apply them independently in their reading, this will guarantee the gradual acceptance of responsibility by the learners which will ultimately lead to higher levels of reading comprehension.

Moreover, the findings of this study lend further support to those of Habibian (2015), who claims that reading comprehension improvement on the part of the participants receiving CSR can be justifiable because once the learners understand why, when, and how to use CSR strategies, they can implement them through the teacher's led activities. Also, when the learners become confident in using CSR strategies independently, the teacher can assign them to cooperative groups where each learner performs a specific role to attain their group's mutual goals (Vaughn et al., 2011). As a result, it is argued in this study and previous literature that delivering high-quality CSR is a facilitative factor in L2 reading comprehension for EFL learners (Chalak & Tahmasebi, 2022).

In addition, our results can explain why the learners in the control group did not improve their reading comprehension. It can be argued that their failure to transform their L1 metacognitive strategies may support the Linguistic Threshold Hypothesis, which argues that EFL students' low proficiency in the target language (Vaughn *et al.*, 2011) could obstruct their engagement in higher levels of cognitive activity (Turnbull & Sweetnam Evans, 2017).

As for the second research question, it was revealed that EG learners had a significantly higher mean score for reading motivation compared with CG learners. In other words, they enjoyed higher L2 reading motivation after receiving the treatment. These findings are compatible with other researchers who stressed that CSR can enhance EFL learners' L2 reading motivation (Grabe & Stoller, 2011; Maghsoudi *et al.*, 2021; McGeown *et al.*, 2020). Higher levels of L2 reading motivation among the participants who received CSR can be attributed to Guthrie *et al.* (2004), who believe CSR can enhance the L2 readers' curiosity and enjoyment of reading. In other words, as shown in our study, CSR helps EFL learners enjoy more intrinsically motivated reading that, in turn, constitutes text interaction for enjoyment, to satisfy curiosity and to gain the rewards of vicarious adventure or gaining new knowledge (McGeown *et al.*, 2020).

Likewise, it has been argued that those motivated to read out of the curiosity aroused by CSR are more likely to be interested in reading than those who do not receive CSR (Ciampa, 2016). Thus, it can be concluded that providing access to effectively implemented CSR with a wide range of topics of interest enables children to read for enjoyment and stimulates their intrinsic motivation (Ciampa, 2016).

Furthermore, in line with our findings, Pinter (2019) has argued that when EFL learners were given the agency in CSR, the reading task worked better, and they were more motivated and engaged in reading and had a stronger performance. The current study is consistent with Brunsmeier and Kolb's (2017) study results that when EFL learners were able to take control of their reading process, they became more actively involved in the story.

Finally, the results of the last research question of the study that was concerned with the effects of CSR on meta-cognitive awareness of EFL learners showed that CSR was conducive to higher levels of metacognitive awareness among EFL learners while engaged in reading. Similar to our results, other researchers have shown in the previous literature that CSR can have positive effects on improving EFL learners' metacognitive awareness (Benlyazid, 2019; Boardman *et al.*, 2015; Gurk & Mall-Amiri, 2016; Vaughn *et al.*, 2011). More specifically, our results are supported by Gurk and Mall-Amiri (2016), who claim that CSR can create multiple opportunities for EFL learners to socially construct meaning, interact in the target language, and accelerate their reading development.

In essence, CSR is believed to establish a context for EFL learners engaged in L2 reading to not only apply their metacognitive strategies but also work collectively on mutual tasks, offering support to one another, communicating, sharing ideas, and solving comprehension failures to improve their reading comprehension (Benlyazid, 2019). This can be attributed to Vygotsky's Zone of Proximal Development (ZPD) theory (1978), which emphasizes the role of the social environment in developing students' cognitive skills. Through interaction and scaffolding, less capable students can construct knowledge within their ZPD with the assistance of more experienced individuals—peers or teachers.

In addition, our findings are compatible with those of Johnson *et al.* (2014), who emphasized the value of working in groups and helping each other to achieve mutual objectives operationalized through CSR in reading tasks, making students active constructors of knowledge (Liang, 2002) and partners of success instead of rivals (Johnson *et al.*, 2014). As a result, when a group member fails to do his share in collaboration with others, the success of the other group members will be jeopardized as well.

Nonetheless, other researchers have provided results that run counter to this study's study on the effectiveness of CSR for improving EFL learners' metacognitive awareness. For instance,

the findings of this present study are inconsistent with McCown and Thomason's (2014) investigation that did not yield a statistically significant difference between the EG and CG groups on the metacognitive awareness level. In fact, in their study, CSR was found to be significantly effective for enhancing EFL learners' reading comprehension levels but not their metacognitive awareness.

Conclusion

The present study was designed to examine the possible effects of CSR on improving Iranian EFL learners' reading comprehension. Furthermore, the study aimed to investigate the effects of CSR on Iranian EFL learners' L2 reading motivation and their metacognitive awareness while engaged in reading.

The major findings of this study revealed that CSR was significantly effective in improving Iranian EFL learners' reading comprehension, L2 reading motivation and metacognitive awareness. In other words, the comparison of the pretests and posttest scores of the learners in the treatment group on the three dependent variables in focus as well as the comparison of the posttest scores of these participants with those of their counterparts in the control (comparison) group demonstrated that CSR can be regarded an effective means in EFL classrooms to improve L2 learners' reading comprehension, L2 reading motivation and their metacognitive awareness, as shown by other researchers.

As it can be concluded from the above-mentioned findings, CSR as an integral part of cooperative learning, can be safely used as an effective technique to influence EFL learners' reading comprehension, particularly when used in small groups. Therefore, it can be argued that CSR is a set of comprehension strategies designed to improve L2 learners' reading comprehension by appropriately utilizing steps such as preview, click and clunk, get the gist, and wrap up through small groups.

It can be claimed that EFL teachers are expected to benefit from CSR in their classes more than before to ameliorate EFL learners' reading comprehension and metacognitive awareness. However, EFL teachers need to bear in mind the fact that the efficacy of CSR depends on several factors such as how it is implemented. For instance, teachers are recommended to cater for the gradual release of responsibility in CSR. Teachers should pay particular attention to a gradual release of responsibility as an integral component of CSR. More precisely, students need sufficient time to understand the elements of cooperative learning, acquire the CSR strategies, and practice them with the teacher's guidance before applying them independently in their groups.

Moreover, it is recommended that teachers design diverse groups, which can result in larger benefits of CSR in EFL classrooms. When group members differ linguistically, they are more likely to use the target language to communicate to, share their ideas, make predictions, and ask and answer questions. Consequently, their target language develops, and their reading skill will improve.

EFL learners can use the present study's findings to improve their L2 reading by benefiting from certain merits of CSR. In other words, it can be claimed that if learners are familiar with the potential of CSR and its effects on their reading and metacognitive awareness, then there are better chances of collaborative learning. Specifically, EFL learners reluctant or resistant to CSR may fail to understand its benefits for their reading comprehension. In such cases, EFL teachers are expected to use other strategies to enhance their students' social skills; otherwise, cooperative groups will not be productive.

As a major limitation of this study, it can be argued that the response bias could have negatively influenced the obtained data in this investigation. When the students responded to the self-report MARS questionnaire, they might not have selected the responses that represented what they did in reality; rather, they might have opted for answers that they thought would appeal to the researcher. As indicated in the literature, this type of bias may arise from social desirability in which subjects select behaviors or attitudes that are more socially acceptable and underreport answers that might be viewed as socially undesirable. Future research by researchers who intend to use MARS as a metacognitive strategy measurement might consider restricting the information they share with their subjects to minimize response bias and obtain more accurate responses.

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