The Reciprocal Questioning as a Formative Assessment Strategy: EFL Learners' Reading Comprehension and Vocabulary Learning

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Abstract
Implementing the mere product-oriented assessment techniques in public schools has exposed the Iranian EFL learners to interminable problems in reading comprehension and the use of the learnt vocabulary in written and spoken communication and language use. This study assessed reading comprehension and vocabulary knowledge by practicing the reciprocal questioning (RQ) as an interactive and ongoing assessment strategy. Forty-eight male intermediate participants were recruited from a population of 60 high school students based on their scores on a Cambridge Preliminary English Test (PET). The study employed two intact classes from which the experimental group with 24 participants was assessed using the RQ, while the control group got summative assessment (SA). These two randomly assigned groups were studied for eight weeks. Then, the obtained pretest and posttest scores were analyzed and compared utilizing the Independent Samples T-test and the one-way ANCOVA. The results underscored the effective and contributive role of the RQ, as the process-oriented assessment, on reading comprehension and vocabulary learning of the learners. In general, the result of this study may be illuminative to the rapidly growing SLA research in

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practicing different formative assessment strategies. In particular, the findings may be pedagogically advantageous to learners, practitioners and theoreticians in SLA.

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1. Introduction

In communicative language teaching and assessment, reading comprehension is mostly regarded as an active process that entails interaction between the reader and the text and among readers. This interaction can be facilitated by utilizing different kinds of teaching and formative assessment (FA) tools. Modern, novel and effective assessment and instruction procedures have been recently considered as the crucial and vital component of any educational setting (Tavassoli & Farhady, 2018). FA, as an ongoing assessment, is a process that is utilized to assist learners, track learners’ progress, provide guidance, and motivate them to work efficiently towards their development and growth (Tomlinson & Moon, 2013). FA, according to Black and William (1998), is attributed to whatever teachers and their students deal with in the classroom assessment setting so as to be utilized as hints and clues which can adapt the instructional tasks that both teachers and students are involved in. In other words, FA suggests a forward-looking aspect for the assessment to remedy the instruction and pave the way for the learners’ language achievement (Black & William, 2018). Generally, students and teachers can use an FA technique while teaching or after the teaching process since the goal is to provide learners with feedback and assistance. The gaps and weaknesses of the instruction process are complemented by the communicative and effective feedback to the learner by the teacher and peers so that they can fulfill the determined goals and objectives (McManus, 2006).
In other words, it is an assessment/instruction tool that is used to adjust teaching and assessment. The reciprocal questioning (RQ) technique is a while-reading or after-reading FA tool.

This technique is compatible with the principles of critical pedagogy, which emphasizes the concept of reciprocity and acknowledges the supremacy of learner in the process of language learning and teaching. Encouraging the teachers to promote students’ participation in the process of teaching and learning. One way to practice reciprocity, and thereby, develop comprehension, according to Deegan (2007), is to develop comprehension by having the teacher and the student take turns asking and answering questions. To assist learners, the teacher herself takes part in practical question asking technique whenever the text becomes difficult or more challenging to the students. The student follows the teacher’s effective modeling to ask appropriate questions. This helps learners to be self-reliant in using the question-asking strategy. As Fisher and Frey (2015) have explained, students’ understanding can be improved when process-oriented FA techniques are regularly practiced in teaching and learning context, since they show the teacher what the current levels of the students are and what they opt to learn. They have argued that there are a variety of engaging activities that check for and increase understanding, including question asking, using oral language, using tests, writing interactively, and much more. RQ is one of those activities in which learners formulate questions of their own interest and track their understanding while reading passages. They become responsible for their own learning and solving their problems. In this regard, Lipson and Wixson (2013) have explained that it is important to understand and address learners’ difficulties in relation to the instructional context in which learners are actively engaged, so the active and communicative role
can be assigned to learners to formatively assess comprehension by using the RQ technique along with feedback and assistance from others.

Innovative assessment techniques of reading comprehension and vocabulary knowledge can inevitably influence teaching and learning and support students’ learning (Gibbs & Simpson, 2004; McDowell, 2006), that is, appropriate assessment techniques can lead to communication and interaction among learners which consolidate their understanding and learning. Teachers’ assessment knowledge is crucial and vital as Soodmand Afshar and Ranjbar (2021) highlighted the importance of teachers’ assessment literacy, their beliefs about assessment and their actual assessment practices in English language learning. Beck and Nunnaley (2020) have also accentuated the critical role of assessment literacy and teaching data literacy in educational systems. Furthermore, Alderson (2005) has discussed that creativity in assessment plays a contributive and vital role in learners’ language achievement. In the classrooms where assessment for learning, commonly called FA, is practiced, learners are made responsible for their own learning and actively participate in the instruction and related assessment process (Goodman, 2011). Similarly, Shermis and Di Vesta (2011) highlighted that teachers are being informed of the learners’ current level of knowledge, their strengths and weaknesses and of the effectiveness of their teaching in the course of interactive instruction when ongoing FA is practiced in the classroom.

In the Iranian foreign language learning school context, reading effectively is one of the most challenging activities for many learners and students’ vocabulary command or the level of learnt vocabulary is a crucial factor in understanding passages. Meanwhile, English language learners at different levels learn vocabulary sets efficiently provided that they read more and more in an instructional context. The association between the reading
skill and contextualizing the vocabulary necessitates considering them as two crucial areas in this study. Second language learners’ command of vocabulary is widely regarded as a critical tool since limited vocabulary knowledge hinders successful interaction and communication among them (Alqahtani, 2015). Learners’ familiarity with reading comprehension tools and strategies is a critical means of understanding for them. In this regard, Harderbeck (2006) stated that readers utilize some mentally driven text comprehension techniques or tasks to facilitate or extend understanding passages.

Most EFL Iranian high school learners have difficulty understanding reading comprehension passages and using their learnt vocabulary in real written and spoken communication context. Malmir and Aghazamani (2019) also stressed that L2 learners may run into difficulties in the development and retention of their vocabulary. Considering the problems in the aforementioned language areas, two main objectives of this study were to broaden EFL students’ knowledge of words and vocabulary and, furthermore, to encourage EFL students to be successful readers in comprehending reading passages by resolving the existing problems concerning these language areas. Consequently, the current study investigated the effect of the RQ technique as an FA tool on the learners’ text comprehension and vocabulary achievement in the EFL context. In the following section, the related literature review and empirical studies are discussed and analyzed in details.

2. Literature Review
2.1 The Reciprocal Questioning as a Formative Assessment Technique
According to Deegan (2007), in the RQ technique, at first, the text is silently read by students and the classroom teacher and, then, each student is motivated to inquire about what has been silently read before from the passage in the textbook. He can ask both the teacher and other students to
reply to the questions. Finally, they change roles when questions about the text are asked and answered. The teacher usually attempts to assist learners to be able to reply to every question asked by other students or by the teacher himself. In the early stages, students may occasionally look at the text since their books are open, whereas the teacher closes his book. In later stages, their books are closed and the teacher poses different questions about the text to elicit the information. This procedure goes on as far as enough information is communicated about the content of the passage and they all had the chance to understand the text by eliciting the information to the extent that they can report it to others as well. In their responses, they are expected to utilize the main and necessary words of the passages. Each student’s progress is closely monitored by the teacher to complete the whole passage by using the question-asking strategy and he is provided with the necessary feedback wherever and whenever needed. RQ is as a variation of the RT strategy which both Grabe (2009) and Haßle (2009) have regarded as a tactical tool in the instruction of reading passages, for applying several strategic responses to passages can be efficient in comprehension development. Likewise, RT is considered as a self-monitoring reading comprehension technique that uses "summarizing, questioning, clarifying, and predicting strategies" (Palincsar & Brown, 1984, p.117). Students can monitor their own comprehension before, during, and after reading in this peer-led and teacher-guided approach.

FA is a kind of communicative, innovative, and interactive tool through which learners are actively involved in the reading comprehension process. As argued by Wiliam (2011), FA is practiced when evidence about students’ performance is collected, analyzed, and utilized by the teacher to decide on the learners’ progress and later steps of instruction. These decisions are likely to be more promising, very focused, and informed in comparison to those without evidence. Similarly, Garrison and Ehringhaus (2007) described that
practicing the FA technique in teaching can make the required information available for the instruction context when the teaching and learning process is in progress. Moreover, the purpose is to help teachers and language learners make adjustments while teaching to guarantee students’ learning and achieving the desired goals. Obviously, teachers are responsible for the employment of different progressive and process-oriented FA tools in providing the learners with effective reading and vocabulary instruction. They should know which assessment types, techniques and criteria are appropriate to their students. The effectiveness of the FA technique of the RQ is scrutinized in this study since FA techniques provide teachers with the chance to assist learners in the instruction and evaluation process.

2.2 Theoretical Background of the Study
According to the Assessment Reform Group (2002), the theory of FA tries to identify learners’ abilities and inabilities in the classroom and provides them with the appropriate assistance in order to enable them to attain their goals in learning by the contribution of different agents (teacher, peer, learner and instructional resources) in the teaching, learning and assessing process. Vygotsky’s theory of scaffolding and the zone of proximal development (Vygotsky, 1978) can account for the assistance provided to the learners and according to Darling-Hammond, Flook, Cook-Harvey, Barron, and Osher (2020) scaffolding empowers students to assess themselves and, in addition, the provided assistance and feedback is an FA technique which supports their growth and development and consequently, makes them independent learners. Similarly, Zare, Barjesteh, and Biria, (2021) pointed to the significance of critical thinking-oriented dynamic assessment in learners' reading comprehension performances. They signified the efficacy of the mediation and feedback provided to the learners through dynamic assessment to enhance the learners' reading achievement.
Ortlieb and Norris (2012) stressed that Vygotsky’s theory of scaffolding can be used to discuss the theoretical framework of the FA tool chosen in this research since regarding Vygotsky’s sociocultural theory (1978) skills are developed in case social interaction is practiced in the classroom. In other words, when the selected FA tool is applied in this study, interaction among learners and with the teacher is something inevitable. This may contribute to the improvement of their reading skills and learning contextualized vocabulary. That is, in language education, a teacher or knowledgeable peers will scaffold the learner to move from the current level to a higher planned level of growth and learning which the learner was not able to master without assistance. Ortlieb and Norris referred to this kind of assistance as scaffolding, which refers to the temporary support that a knowledgeable person (a teacher, a peer) provides to the student in the process of learning to facilitate learning (Ortlieb & Norris, 2012). That is, the teacher makes the required connection and association between the learner’s current status of learning and the desired stage. Eventually, the goal of introducing the FA tools to students is to enable them to use these tools on their own to improve their command of reading and their reading skills and, consequently, make them want to read more. Likewise, RT is regarded as a scaffolding strategy in which good readers practice four critical techniques to comprehend passages since learners are actively engaged in social teaching and learning context and it helps learners to be independent (Oczkus, 2018). The learning theory of constructivism (Vygotsky, 1998) is addressed in this study because FA, according to Black and Wiliam (2009), originates from the fact that students master skills through their active participation when they pay attention to their learning or analyze what they learn. They are regularly being involved in the language learning process that happens in the cultural and social context of the classroom. Kim (2020) also concluded that teaching language
can help people live their lives in social, cultural, political settings or in others’ worlds.

2.3 Related Empirical Studies
Some recent researchers carried out their studies on the possible effects of RT on the reading skill and their findings revealed the effectiveness of this strategy as a teaching tool (AlSaraireh, 2016; Ayun & Yunus, 2017; Ismail, Ahmadi, & Gilakjani, 2012; Lewis, 2016; Meyer, 2010; Warman, 2016). The impact of participatory critical pedagogy on Iranian EFL learners' class participation, engagement and enjoyment have also been reported (Mousavi & Ketabi, 2021) and reciprocal techniques like Think-Pair-Share interactional activities have been found effective in enhancing learners’ Willingness to Communicate (Zohrabi & Jafari, 2020).

In the EFL context, some others researched the effects of RT on the reading comprehension of EFL learners and they revealed that RT can make learners' text comprehension better in the EG in comparison to the CG (Ashegh Navaie, 2018; Rahimi & Sadeghi, 2015). Similarly, Rufinus and Wijaya (2014) conducted an experimental study about the effect of the RQ technique on the instruction of the reading skills with a pretest/posttest design. The findings revealed the effectiveness of this teaching tool in improving reading comprehension. However, in almost all of them, they have not considered RT as an assessment tool and were all ignorant of the role of RT in vocabulary learning.

The next group of researchers conducted their studies at different levels or using different methods and techniques. For example, Oddo, Barnett, Haskins, and Musti-Rao (2010) investigated the impact of RT on oral reading fluency and comprehension in small groups of fourth-grade students in a different study. The findings revealed that RT improved levels of reading fluency and reading comprehension skills of the four targeted students as
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well as class-wide performance in fluency and comprehension. In the same line, Ersianawati, Santosa and Suprianti (2018) investigated the effect of the RQ strategy combined with numbered heads together on reading comprehension of the eighth-grade students. The results showed that there was an effect of reciprocal questioning strategy combined with numbered heads together on reading comprehension of the eighth-grade students. Likewise, Sporer, Brunstein, and Kieschke (2009) carried out their research on the effect of RT strategy on the elementary-level learners' reading skill and concluded that learners who used RT in small groups performed better than those in teacher-assisted and conventional teaching classes on final reading comprehension tests. In another research in 2012, Freihat and Almakhzoomi studied university-level students to research their comprehension behavior when RT is implemented and highlighted the facilitative role of practicing RT in reading comprehension at the university level. However, the other researcher found no positive impact for RQ on reading skills including the research done by McKewon, Beck, and Ronette (2009), which indicated no meaningful impact for RT.

The literature review also reveals that empirical studies are increasingly available on questioning in EFL classroom contexts. Some researchers applied the question-answer technique, a teaching tool to foster understanding passages in the EFL context (Abdul Baqi, 2019; Ernaini, Nurweni, & Suparman, 2018). The results of both studies revealed the effectiveness of the question-answer technique in enhancing the students’ reading comprehension. Moreover, in a research project, Ernaini, Nurweni, and Suparman (2018) investigated the effect of the question-answer technique on teaching reading. As the findings revealed, students’ achievement in reading improved. The results also revealed that despite the significant differences in the mean scores, some learners had difficulty
understanding passages because they were unable to recognize differences in the question-answer relationship. Additionally, some researchers conducted their research on the effect of the PQRST reading technique, which stands for previewing, questioning, reading, summarizing and testing on understanding passages (Khoiriah, Suparman, & Nainggolan, 2017; Malia, 2015; Miqawati & Sulistyo, 2014; Susanti, 2013). The findings of all these studies confirmed the contributive role of the PQRST technique in learners’ text comprehension. They summarized the effectiveness of the PQRST technique for various knowledge levels and different text types among students.

The review of literature on the questioning-reporting strategy of reciprocal/request revealed that there was little research on this topic and almost all of the studies focused on the instructional aspect of RT rather than the RQ as an assessment technique. They regarded only reading comprehension while they were ignorant of vocabulary learning. Unlike our research in which the focus was on intermediate learners, Diehl (2005) and Okkinga, Steensel, Van Gelderen and Sleegers (2016) conducted their research on the role of RT in reading comprehension of the students with low reading skills. Their findings confirmed the effectiveness of RT in learners’ comprehension and understanding. In the Iranian EFL context, reading comprehension and vocabulary are not generally assessed or taught communicatively for English language learners and they are not actively involved in the while teaching, ongoing assessment process, so this leads to lack of comprehension and vocabulary use and, consequently, limited use of interaction and communicative language among them. This seems to be one of the major problems in the Iranian educational setting.

A cursory review of the related literature displays a lack or paucity of research regarding the advantage of the FA technique of RQ in reading comprehension and vocabulary learning. In the Iranian EFL context, this gap
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is fore-grounded when process-oriented assessment techniques are required to fulfill the communicative and interactive potential of learners in English language instruction in order to solve some of the aforementioned problems. Hence, the goal of the current study was to shed light on the impact of the RQ technique on EFL students’ text comprehension and vocabulary knowledge.

To bridge the gap in the research and explore the practicality of this FA tool in English language learning and assessment in Iran, the current study addresses the following research questions:

1. What is the effect of the FA technique of reciprocal questioning on the reading comprehension of the EFL students?
2. What is the impact of the FA technique of reciprocal questioning on the EFL learners’ vocabulary learning?

It seems that the RQ assessment tool can improve both reading comprehension and vocabulary knowledge in the EFL context. Similarly, it may develop vocabulary knowledge more than reading comprehension due to the continuous contextualization of the new words and expressions of their textbook in the ongoing assessment process. As a result, in seeking to understand the implication of RQ as an FA strategy in the Iranian EFL context, this study hopes to improve EFL learners’ reading comprehension and vocabulary knowledge and pinpoint the significance and application of this technique in SLA context.

2.4 Purpose of the Study

Learning a second / foreign language involves practicing four language skills. Developing these skills leads to effective communication in the ESL / EFL context. Two critical language areas pertaining to successful interaction are the amount of vocabulary one possesses and the ability of language learners in understanding reading passages since they provide the students with
meaningful input and constitute the knowledge base of the learners (Alqahtani, 2015). Firstly, EFL learners are generally unable to remind and utilize their learned vocabulary and also run into trouble in learning new words and expressions. Secondly, these learners cannot understand reading passages in their school textbook owing to lack of practice, contextualization of the vocabulary, and efficient ongoing assessment procedures. The importance of these language areas necessitates scrutinizing the problem and carrying out research in these under-researched areas which bring about communication failure. Most of the previous researches have contributed to teaching methods and techniques in vocabulary development and reading comprehension rather than assessment especially formative one in ESL/EFL context (Ahmadi, Ismail, & Abdullah, 2012; Alqahtani, 2015; Soleimani & Hajghani, 2013). Therefore, the purpose of this study was to investigate the possible effect of the RQ as an FA tool on reading comprehension and vocabulary knowledge of the Iranian EFL students.

It appears that the FA technique of RQ may contribute to the development of EFL learners’ vocabulary command and their reading comprehension ability due to enhancing communication and interaction among the learners since, as Ayun and Yunus (2017) have argued, the aim of the RQ is to assist learners to interact and communicate with each other in their classroom groups to understand the passages in school textbooks. They can increase their vocabulary knowledge since they contextualize the newly acquired words and expressions through the ongoing FA process. Similarly, they may boost their reading comprehension skill because of generating and answering questions continuously during and after teaching as a form of assessment.
3. Method

3.1 Participants

The participants were intermediate EFL learners in Allameh Jafari High School of Marand. The participants’ mother tongue was Turkish. Their age range was 16 to 19. Forty-eight participants were selected out of 60 after administrating the revised Cambridge Preliminary English Test (PET) on the basis of their test score. That is, 12 participants were excluded from this study because of their too low or too high performance in the revised PET. They were placed in two groups, including 24 male intermediate level students, by school authorities. The two groups of the study were randomly assigned, according to the research objectives as follows:

1. The experimental group (EG), which was assessed using FA in the form of the Reciprocal Questioning technique and all the activities, tasks, and exercises provided in the textbook besides midterm and final term exams.

2. The control group (CG), which received SA including activities, tasks, and exercises provided in the textbook along with the midterm and final term exams.

The study was conducted to investigate whether the aforementioned FA technique could affect the participants’ reading comprehension and vocabulary knowledge or not.

3.2 Materials

The instruments required for data collection were as follows: The participants' proficiency level was checked by using the revised Cambridge Preliminary English Test (PET). It included 60 items (30 vocabulary tests, 30 reading comprehension questions). The questions in this proficiency test were in low intermediate or B1 levels. The pre-test was used before the treatment. It consisted of 25 vocabulary tests, 15 reading comprehension tests, and 10
The post-test, which included 25 vocabulary tests, 15 reading comprehension tests, and 10 cloze passage test items, was utilized to check the effect of the FA tool as the treatment on the participants’ reading comprehension skill. The level and format were the same for both the pretest and posttest, but the questions or test items were different for each test. All the test items on pre- and posttests were selected from the Konkur exam (the entrance exam of universities in Iran) question bank since they are considered standard tests of English in Iran. Eight reading comprehension passages and eight vocabulary sets from the fourth grade of the high school textbook were also utilized in this study.

3.3 Procedure
This quasi-experimental research involved a comparison between two groups without random selection of the participants and followed a pretest and posttest design (Dörnyei, 2007). The data collection was implemented using a quantitative approach. The students were also chosen and enrolled this school after taking a standardized test administered by the Ministry of Education and the National Organization for Development of Exceptional Talents (NODET) or (Sampad in Persian) in Iran and this was used as the basis for ensuring the homogeneity of the students. In addition, a 60-item revised Cambridge Preliminary English Test (PET) was used to check whether there was a significant difference between the mean scores of the EG and the CG prior to using the FA technique or not. Sixty participants took this test and they answered these questions in 80 minutes. The results were used to select the 48 students as the final participants on the basis of their test results. That is, 12 too low and too high achiever participants were excluded from this study to contribute to the homogeneity of the participants in the two groups. At first, the participants in each group were trained and instructed on the form of assessment that was to be applied; that is, the students became familiar with
the assessment strategy in each group prior to the instructional treatment. Secondly, the participants were given a pretest to ensure comparability of the participants prior to receiving their treatment, that is, before the instruction and assessment of reading comprehension passages. The participants were provided with 25 vocabulary test items, 15 reading comprehension test items, and 10 cloze passage test items.

The EG practiced the reading comprehension passages by applying the specific ongoing FA technique. That is, students were assigned a passage to read and assessed using RQ. They were provided with eight reading comprehension passages to be assessed in 8 sessions. The treatment that they received included 8 sessions of assessment, that is, two sessions in a week. The study took almost 3 months. Each session of assessment regarding the use of FA strategies went on for 90 minutes. Both groups used the same course-book, reading passages, vocabulary sets, teaching methods and equal teaching hours, but the RQ as a FA tool was used in the EG. The CG, SA group, was assessed by mid or final term exams without providing any assistance or feedback and they practiced the same activities and exercises provided for both groups in their school textbook; therefore, the effectiveness of the treatment was investigated. In the class, students met in either small or whole class groups for discussion. Students asked and answered questions continuously. As the discussion moved around the classroom, one student could answer a previous question posed by another student, raise a question to the other one. As the activity built around the room, the interaction became in-depth with an opportunity for all the students to learn new perspectives on the text.

During the assessment process, by using the FA technique, the production of the learners was continuously scored, that is, the questions that were asked by the students and the utterances and sentences that were
communicated, expressed, or reported by the students. After eight weeks of implementing the questioning-reporting strategy as an FA tool for EG (reciprocal questioning) and CG (no specific treatment) except the activities, exercises, tasks and assignments provided in their textbook, both groups were given a posttest, 25 vocabulary test items, 15 reading comprehension test items and 10 cloze passage test items to measure the effects of the FA.

After collecting the data, the pre-and posttest scores of both groups in reading comprehension and vocabulary learning were compared and contrasted on the SPSS software. According to Dörnyei (2007), the data obtained from this type of study with a “pretest–posttest control and treatment group design” could be analyzed using ANOVA or ANCOVA, but to reduce the initial group differences and to get more precise results by controlling the pre-test scores, the ANCOVA was applied to investigate two research questions of the study. Finally, the findings were discussed and reported embedded within the text and in separate tables.

4. Results

As there was a two-group pretest-posttest design in the study, the univariate one-way ANCOVA was used to analyze the data and the pre-test scores were treated as a covariate to control the pre-existing differences between two groups (Dörnyei, 2007). ANCOVA as a statistical procedure for data analysis has some assumptions that researchers should take into account prior to using the ANCOVA so as not to violate them. Some of the important assumptions including normality test, Levene’s homogeneity of variances, homogeneity of regression slopes, scatterplot and linearity were checked in this study.

4.1 Assumptions for the ANCOVA

The results of the analysis for the normality of data and Levene’s homogeneity of variances as two of the assumptions for ANCOVA are shown in tables 1 and 2. In many statistical tests, it is required to assess the
normality of data since it is a prerequisite for parametric tests; therefore, the Shapiro-Wilk and Kolmogorov-Smirnov normality tests were used to check the normality of two sets of the pretest scores. The results revealed that the difference was not significant between the EG and CG as it is obvious in Table 1. The normality of the data \((p > 0.05)\) was confirmed. Thus, this assumption was not violated.

Table1

<table>
<thead>
<tr>
<th>Tests of Normality of Two Groups</th>
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<tr>
<td>pre-test</td>
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<td>pre-test</td>
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</table>

Note. RQG = Reciprocal Questioning Group

Levene's homogeneity of variances test was analyzed by applying Independent Samples T-test since there were two groups in this study. As presented in Table 2, there were no significant differences between pretest scores \((p = .570 > 0.05)\) of two groups in Levene's homogeneity of variances; therefore, the assumption for homogeneity of variances was not violated.

Table 2

<table>
<thead>
<tr>
<th>Levene's Test for Homogeneity of Variances on Pre-tests of Two Groups</th>
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</thead>
<tbody>
<tr>
<td>Groups</td>
</tr>
<tr>
<td>Levene Statistic</td>
</tr>
<tr>
<td>Pre-tests of two groups</td>
</tr>
</tbody>
</table>

Independent Samples T-test that was applied for the pretests of two groups and, as presented in tables 3 and 4, the results revealed no significant difference between the mean scores of two groups \((p = .912 > 0.05)\) prior to utilizing the RQ assessment technique as treatment.

Table 3

Descriptive Statistics: Independent Samples T-test on Pre-tests of Two Groups
Groups | N | Mean | Std. Deviation | Std. Error Mean
---|---|---|---|---
Reciprocal Questioning group | 24 | 30.29 | 2.349 | .480
Control group | 24 | 30.20 | 2.843 | .580

The results of the analysis for the homogeneity of regression slopes and scatterplots for pretest and posttest scores on reading comprehension and vocabulary are shown in Figures 1 and 2. The main conclusion that can be drawn from the following two figures is that the regression lines are almost perfectly parallel and the scores have been scattered around the regression lines. It confirmed that the research data met the homogeneity of regression slopes assumption required by ANCOVA. Furthermore, no deviations from linearity were observed meeting the ANCOVA assumption.
The main ANCOVA analysis was carried out after checking for the important assumptions that were not violated in the study. They are discussed in the following sections.
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4.2 The Results of ANCOVA for the Post-tests of two Groups on Reading Comprehension

Research question number one was scrutinized for probable improvement of reading comprehension in the EG and CG by using one-way ANCOVA. The posttest mean scores of the two groups were weighed up to check the impact of the RQ technique on text comprehension of EFL students. The outcome of the comparison of the posttests of two groups was analyzed and presented in different tables. Tables 5 and 6 compare the ANCOVA results for the two groups on reading comprehension.

Results of one-way ANCOVA analysis on the posttests in tables 5 and 6 (see Table 5 and 6) revealed that there were significant differences ($p=.000<0.05$) in the mean scores of the EG ($m=32.25$) and CG ($m=30.62$) in reading comprehension; therefore, it could be argued that the FA technique of the RQ improved EFL learners’ reading comprehension. In other words, it can be understood that regarding SA, there was almost no significant effect on improving the achievement of the CG learners in text comprehension, but the RQ technique was effective in improving the learners’ reading skill. Although, there was a mean difference between the pretest and posttest scores in the CG, it was not statistically significant when compared to the EG.

Table 5
Descriptive Statistics: One-Way ANCOVA on Post-tests of Reading Comprehension in two Groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Std. Deviation</th>
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<tr>
<td>Reciprocal Questioning Group</td>
<td>32.25</td>
<td>1.700</td>
<td>24</td>
</tr>
<tr>
<td>Control Group</td>
<td>30.62</td>
<td>2.634</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>31.44</td>
<td>2.342</td>
<td>48</td>
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Table 6
One-Way ANCOVA on Post-tests of Reading Comprehension in two Groups

<table>
<thead>
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<th>Tests of Between-Subjects Effects</th>
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<table>
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<tr>
<th>Source</th>
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<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
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<td>107.977</td>
<td>116.080</td>
<td>.000</td>
<td>.838</td>
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<tr>
<td>Intercept</td>
<td>22.967</td>
<td>1</td>
<td>22.967</td>
<td>24.690</td>
<td>.000</td>
<td>.354</td>
</tr>
<tr>
<td>Reading com.(pre-test)</td>
<td>184.266</td>
<td>1</td>
<td>184.266</td>
<td>198.095</td>
<td>.000</td>
<td>.815</td>
</tr>
<tr>
<td>Group</td>
<td>29.235</td>
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<td>29.235</td>
<td>31.429</td>
<td>.000</td>
<td>.411</td>
</tr>
<tr>
<td>Error</td>
<td>41.859</td>
<td>45</td>
<td>.930</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>47697.000</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Corrected Total 257.812 47

a. R Squared = .838 (Adjusted R Squared = .830)

4.3 The Results Regarding the Effect of the Reciprocal Questioning on Vocabulary Learning

The second research question was investigated to check the effect of the FA technique of the RQ on vocabulary learning. To compare the mean scores of two groups of the study, a one-way ANCOVA was used and the results of the analysis of the posttests for two groups were analyzed and presented in different tables. Tables 7 and 8 display the comparison of the results of the analysis for the EG and CG in vocabulary learning.

The outcome of one-way ANCOVA analysis of the posttest scores, as presented in tables 7 and 8 (see Table 7 and 8), indicated that the difference ($p=.000<0.05$) between the mean scores of the EG (m=32.79) and CG (m=30.71) in vocabulary learning was significant; therefore, it can be inferred that the FA technique of the RQ improved EFL learners’ vocabulary mastery. In other words, it can be understood that SA had almost no significant effect on improving the learners’ vocabulary knowledge in the CG, but the RQ group was effective in improving the learners' vocabulary command. Besides the mean differences (MD=0.51) between pretest (m=30.20) and posttest (30.71) scores in the CG, the effectiveness of the SA with activities, tasks, exercises provided in the textbook and the midterm and final term exams was not meaningful.

Table 7
Descriptive Statistics: One-Way ANCOVA on Post-tests of Vocabulary in two Groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reciprocal Questioning Group</td>
<td>32.79</td>
<td>1.744</td>
<td>24</td>
</tr>
<tr>
<td>Control Group</td>
<td>30.71</td>
<td>2.612</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>31.75</td>
<td>2.436</td>
<td>48</td>
</tr>
</tbody>
</table>

Table 8
One-Way ANCOVA on Post-tests of Vocabulary in two Groups

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>234.500</td>
<td>2</td>
<td>117.250</td>
<td>118.567</td>
<td>.000</td>
<td>.841</td>
</tr>
<tr>
<td>Intercept</td>
<td>25.427</td>
<td>1</td>
<td>25.427</td>
<td>25.713</td>
<td>.000</td>
<td>.364</td>
</tr>
<tr>
<td>Vocabulary(pre-test)</td>
<td>182.417</td>
<td>1</td>
<td>182.417</td>
<td>184.466</td>
<td>.000</td>
<td>.804</td>
</tr>
<tr>
<td>Group</td>
<td>48.938</td>
<td>1</td>
<td>48.938</td>
<td>49.487</td>
<td>.000</td>
<td>.524</td>
</tr>
<tr>
<td>Error</td>
<td>44.500</td>
<td>45</td>
<td>989</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>48666.000</td>
<td>48</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>279.000</td>
<td>47</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Discussion

The findings revealed that the EG outperformed the CG; therefore, it can be concluded that the questioning-reporting strategy or FA technique of the RQ improved vocabulary learning and understanding passage in the EG. The findings in this study were generally in favor of the effect of the FA technique. That is, the RQ, as an FA technique, was effective in enhancing reading comprehension skill and vocabulary command in the EFL context. In other words, the findings confirmed the hypotheses regarding the first research question, which was about the effective influence of the RQ technique on EFL students’ comprehension and the second research question, which was about the contributive role of the RQ technique in promoting vocabulary knowledge in the EFL context as it was claimed prior to the implementation of this study. Comparing the mean scores on the posttest of
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the reading skill and vocabulary learning showed improvements when the RQG was used. This confirms the effect of the FA technique of the RQ in the EG on reading comprehension and vocabulary learning in the same way.

There is reasonable concordance between the findings of this study and the ones conducted by others (Oddo, Barnett, Haskins, & Musti-Rao, 2010; Sporer, Brunstein, & Kieschke, 2009). The practice of RQ makes EFL learners perform better in the intermediate level classes as was revealed by the findings of this study. This study also goes with the ones conducted by some other researchers (Ashegh Navaie, 2018; Diehl, 2005; Ersianawati, Santosa & Suprianti, 2018; Okkinga, Steensel, Van Gelderen & Sleegers, 2016; Rufinus & Wijaya, 2014), pertaining to the effect of the RQ on reading comprehension skill. They all excluded its impact on vocabulary learning though the research methods, participants’ level and age were different. They considered RQ as a teaching rather than an assessment tool.

The findings are consistent with the results of some of the studies in the literature on the impact of this RQ tool in improving reading comprehension (e.g., AlSaraireh, 2016; Ayun & Yunus, 2017; Ismail, Ahmadi, & Gilakjani, 2012; Lewis, 2016; Meyer, 2010; Rahimi & Sadeghi, 2015; Warman, 2016), whereas all of the studies considered the RQ as an instruction tool and did not consider vocabulary learning. All of the aforementioned studies focused only on the effect of the RQ on reading comprehension, but this study implemented the RQ as an FA assessment tool. This shows that the RQ is effective in improving reading comprehension whether it is used as an assessment tool or an instruction technique. The current study results also concurred with those of the studies conducted by Abdul Baqi (2019) and Ernaini, Nurweni and Suparman (2018), in that they concluded the facilitative role of the RQ in improving reading comprehension of EFL learners. Besides, our study focused on vocabulary knowledge as well. In
addition, it filled the gap in the studies in the literature by considering the effect of the RQ on vocabulary knowledge in the EFL context. There were scant studies in this regard in the literature.

The findings of the study showing the facilitative role of the RQ in reading comprehension skill stand in contrast to the research conducted by McKewon, Beck, and Ronette (2009), who reported that the RQ technique did not significantly affect learners’ reading comprehension. The results of this study go against the study done by Freihat and Almakhzoomi (2012) regarding the level of the learners, but conform to it concerning the RQ impact on comprehension.

The application of this technique expanded the EFL learners' reading skills and vocabulary knowledge. Moreover, the findings conformed to the theoretical background including Vygotsky’s theory of scaffolding and the socio-cultural perspective (Vygotsky, 1978) since participants regularly interacted with each other about the passage in this study. Raising questions and answering them were all within the zone of proximal development (Vygotsky, 1978) of the learners, for the interaction and communication was comprehensible enough for the learner to be understood due to the similarity in learners’ level of knowledge. Likewise, this is in agreement with Krashen’s input hypothesis (1981) because the information that is communicated among learners is mostly understandable and within their reach since learners are generally at the same level of knowledge. The teacher also tries to make adjustments in the information and question and answer format while assessing the reading comprehension. That is, the i+1 input level is provided for the sake of mutual understanding among learners and the teacher and students. In other words, the teacher made the required connection and association between the learners' current knowledge status and the planned and desired knowledge level (Ortlieb & Norris, 2012) when
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this FA tool was practiced among students to enable them to ask and answer questions about the content of the passage using the contextualized important vocabulary of the textbook or report the main information of the passage to others. In this way, students improved their command of reading and consequently became interested to read more. The interaction among learners occurred in the social and cultural setting of the classroom while questioning and reporting process in the classroom. Learners constructed their knowledge through being actively involved in thinking and analyzing what they learnt in their reading comprehension class.

By and large, almost all the studies emphasized the positive role of the FA in improving reading comprehension, but this study had a different focus on reading comprehension in the EFL context using a different and under-researched FA tool, the RQ, which was similarly effective in enhancing reading comprehension and vocabulary knowledge among EFL learners. According to the SLA theories, the FA technique of the RQ enhanced students’ achievement in reading comprehension and vocabulary command as they engaged and involved students in the instruction process and assisted the learners to make them responsible for their learning and form an ability to find information about the content that they have acquired and how they have done it. Similarly, research findings may have some connection with Swain’s comprehensible output hypothesis (Swain & Lapkin, 1995), that is, when students run into a problem or gap in their current knowledge level in the second language (L2). First, students observe the problem. Then they become aware of it and, finally, they may be able to modify their output so that they learn something new about the language. This regularly happens in question and answer moves of the learners while applying the RQ technique in assessing reading comprehension and vocabulary learning.
By implementing this FA tool, EFL learners construct their knowledge since scaffolding and feedback are provided to the learners by their peers or teacher. Asking and answering questions also provide input flooding, which assists the students in learning easily. That is, through consciousness-raising, they monitor their learning process and try to find new ways of problem-solving. They become able to realize the strengths and weaknesses of understanding passages because they are provided with comprehensible input and effective feedback by the teacher and peers as they have the chance to interact and communicate with each other. The learners’ achievement can also be attributed to the adequate amount of interaction in the classroom since FA is both a teaching and an assessment tool with a facilitative role in SLA classes. The RQ was effective in improving learners’ understanding and vocabulary knowledge because the participants were able to speak English to some extent as a result of their more exposure to English language input, and their interaction, communication, and discussion in the classroom context.

6. Conclusion and Implications

Generally, the results disclosed that FA contributes significantly to language learning in comparison with SA when different teaching techniques and strategies are implemented along with various assessment techniques and tools. Specifically, the FA technique of the RQ can be efficient in the EFL context to help learners succeed in comprehending reading passages and learning vocabulary through contextualizing due to increased interaction and communication, provision of a high amount of input which is also comprehensible, presentation of assistance through communicative feedback and scaffolding and excessive practice in this ongoing assessment process of the reading comprehension passages.

Generally, the findings can be advantageous to EFL language teachers and theoreticians. Particularly, the result of this study may illuminate the
dynamic and growing body of research in SLA to care about the shifting sands of applying different FA tools and techniques in language teaching and assessment. Furthermore, the research findings empower EFL or ESL students to boost their mastery of reading comprehension and vocabulary knowledge by familiarizing them with a wide variety of instruction and assessment techniques and methods. The knowledge and familiarity with assessment tools make them strategic, independent, and responsible language learners. Especially, practitioners can apply the findings to create an effective, interactive and communicative classroom atmosphere by engaging students in their teaching and learning process through innovative, novel, and process-oriented assessment strategies. The results may enrich the assessment and instruction process by using FA techniques that can provide both teachers and students with constructive feedback. Consequently, the findings of this study can be rewarding for English language students to consolidate their text comprehension and vocabulary use by being actively engaged in the teaching and learning process through applying process-oriented classroom assessment techniques and to language teachers to be successful and beneficial in their teaching practice.

To sum up, the findings can be applied by EFL students and teachers, curriculum designers, and educational policy makers as well. In addition, material developers and policy makers may apply the findings of this study in the publication and preparation of appropriate teaching materials and resources in order to develop instructional curriculums and planning lessons. As there are many other different FA tools and techniques, researchers who are interested in the assessment and evaluation of the learners can conduct further research on the impact of the rest of the FA techniques on speaking, listening, and writing skills and sub-skills like grammar and pronunciation in SLA research.
References


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