The effect of soft vs. hard scaffolding on reading comprehension skill of EFL learners in different experimental conditions

Haleh Mojarrabi Tabrizi, Biook Behnam* and Mahnaz Saeidi

Abstract: The purpose of this study was to investigate the effect of using hard and soft scaffolding on Iranian EFL learners’ reading comprehension ability in two different experimental conditions, i.e. symmetrical and asymmetrical. One hundred and twenty Iranian intermediate EFL learners were recruited from a population of 400 based on their performance on a placement test. They were randomly assigned into five groups (four experimental groups and one control group), each containing 24 participants. A pre-test of reading comprehension was administered to ascertain the homogeneity of the participants. Then, the experimental groups were exposed to one of the intended treatments for 20 sessions, while the control group received only regular classroom reading instruction. Finally, the learners were given a post-test of reading comprehension used to measure their reading skill. The findings revealed that scaffolding had a positive effect on reading comprehension ability of EFL learners. Soft scaffolding was observed to be effective in asymmetrical condition; however, in symmetrical condition, the effectiveness was not observed. Moreover, hard scaffolding was found to be effective in both symmetrical and asymmetrical conditions. In both of these arrangements, the participants experienced improvement in their performances on the posttest. The implications are...
discussed in terms of the efficacy of hard and soft scaffolding in symmetrical vs. asymmetrical conditions in enhancing EFL learners’ reading comprehension.

**Subjects:** Bilingualism & Multilingualism; Grammar; Lexicology; General Language

**Reference**

**Keywords:** hard scaffolding; soft scaffolding; symmetrical; asymmetrical; reading comprehension

1. Introduction

According to Macaro (2003), reading comprehension has been the focus of many studies in the field of teaching and learning a foreign language. Reading comprehension is a complex process of making meaning from text by combining the reader’s previous knowledge, the information in the text and the context of the reading situation (Anderson, Hiebert, Scott, & Wilkinson, 1985). Besides, Harmer (2001) asserted that reading is not a passive process since the reader should process the written text with the help of previous and new knowledge. There are various factors inside and outside learners that influence their reading performance. According to Snow (2002), reading comprehension is the result of numerous interactive factors. Snow (2002) claimed that reading comprehension consists of three elements: the reader, the text, and the activity or purpose for reading. These elements interrelate in reading comprehension within a larger sociocultural context. Sociocultural theories of learning and literacy illustrate how children acquire literacy via social interactions with more knowledgeable others. According to Vygotsky (1978), with the guidance of a more knowledgeable other, children can do tasks that are a little beyond their own capability. When they turn out to be more competent and experienced with the task, the support is withdrawn, and the children internalize the new knowledge, which brings about learning. This guidance or support is called “scaffolding” (Yu, 2004).

The term “scaffolding” was introduced by Wood, Bruner, and Ross (1976) as a “process that enables a child or novice to solve a problem, carry out a task, or achieve a goal which would be beyond his unassisted efforts” (p.90). Scaffolding originated from Lev Vygotsky’s sociocultural theory (SCT) and his notion of the zone of proximal development (ZPD). In Vygotsky’s view, learning does not occur in isolation. Instead, it is robustly influenced by social interactions in meaningful contexts. Peer interactions are important for classroom scaffolding.

According to Saye and Brush (2002), there are two levels of scaffolding: soft (dynamic) and hard (static). Soft scaffolds refer to dynamic, situation-specific support by a teacher or peer to during the learning process. This sort of support is usually provided “on-the-fly,” where the teacher scrutinizes the advancement students are making in a learning process and mediates when assistance or guidance is needed. In contrast, hard scaffolds are static assistances that can be predicted and planned beforehand based on student difficulties with a task. Hard scaffolds are utilized to provide learner support at various difficult stages while the learner is dynamically engaged with a problem. The difference between soft and hard scaffolding lies in the timing and planning of the treatment. In hard scaffolding, in contrast to the soft one, the treatment is pre-planned. The teacher, while planning the lesson, decides what areas might be problematic to the learners based on the previous experience they have had in their classes and thinks of remedies for those problems. They enter the class equipped with material and solutions for the potential problems and offer them to the learners when needed. Both hard and soft scaffolds are necessary for students’ success (Saye & Brush, 2002).

More recently, the central tenants of cognitive constructivism and SCT were patent in symmetrical and asymmetrical scaffolding (Ghasedi, Okati, Mashhady, & Fallah, 2018; Granott, 1993; Izanlu & Feyli, 2015; Pishghadam & Ghadiri, 2011). In fact, Piaget (1960) believed in symmetrical relationship between peers, whereas Vygotsky (1978) advocated the asymmetrical relationship between peers. In a symmetrical group of peers, the learners are of equal ability, prior knowledge,
and status (Dillenbourg, 1999). In symmetrical peer groups, scaffolding is a reciprocal process in which learners scaffold at different times as symmetry of knowledge fluctuates (Sangin, Molinari, Nüssli, & Dillenbourg, 2008). It is assumed that, in symmetrical scaffolding, students cooperate with other students of similar levels of ZPDs. On the other hand, asymmetrical scaffolding is rooted in Vygotsky’s (1978) notion of ZPD. Vygotsky’s (1978) claimed that in asymmetrical scaffolding, learning takes place faster when learners interact with more knowledgeable peers.

2. Review of the related literature
In retrospect, there has been increasing interest toward ZPD and scaffolding in the realm of research in social sciences. A plethora of studies underscored the critical role of scaffolding in academic context especially in improving learners basic language skills (Ableeva, 2010; Ghasedi et al., 2018; Pishghadam & Ghadiri, 2011; Talley, 2014; Wachyunni, 2015).

Abdul-Majeed and Muhammad (2015) investigated the effect of using scaffolding strategies on EFL students’ reading comprehension skill. The study was conducted with 44 college students. It was a six-week experiment with a pretest-posttest non-equivalent groups design. The experimental group was taught reading comprehension using scaffolding strategies for six weeks while the control group was taught according to the lecture method. The results of independent t-test revealed that scaffolding had a positive effect in improving reading comprehension skill of the participants. Similarly, Kusumawati (2018) studied the scaffolding learning in reading and writing skill in English for mechanical engineering. The participants were provided with structured learning support and were encouraged to learn more independently. The results showed improved skills of both learning skills in the post-test. It was concluded that scaffolding learning was an effective technique to develop the English proficiency of the participants.

In the Iranian context, Ghasedi et al. (2018) studied the efficacy of symmetrical and asymmetrical scaffolding in boosting speaking complexity, accuracy, and fluency of Iranian EFL learners. The participants of the study were 38 upper-intermediate EFL learners who were assigned into symmetrical group, asymmetrical group and control group. The experimental groups worked collaboratively while the control group participated in an ordinary speaking class. Two different versions of the IELTS speaking test were used as pre- and post-tests. The results demonstrated that symmetrical and asymmetrical scaffolding significantly affected speaking subcomponents, especially complexity and fluency. In the same vein, Rezaee, Marefat, and Soeedakhtar (2015) conducted a study aimed at investigating the effect of symmetrical and asymmetrical scaffolding on the colloccational competence of Iranian intermediate learners of English in the context of concordancing. Immediate and delayed post-tests were administered to examine the effects of the treatments over 10 sessions on L2 collocations in the receptive and productive tasks. The results indicated that the symmetrical, asymmetrical, and no-scaffolding groups that received the treatment tasks in the context of concordancing, developed their knowledge of collocations notably both in the receptive and productive tasks compared to the control group which had no access to concordancing and did not receive scaffolding.

In an experimental study, Poorahmadi (2009) investigated the effect of scaffolding strategies and classroom tasks on teaching reading comprehension to Iranian EFL learners. One hundred and thirty Iranian female first-year university students were randomly assigned to experimental and control groups. The experimental group received supplementary materials and scaffolding, while the control group received the traditional method of teaching. The results of the study advocated the positive effects of using scaffolding strategy in improving reading comprehension ability of the participants. Khosravi (2017) studied the effect of symmetrical scaffolding on advanced students’ reading comprehension. The participants were 20 advanced Iranian students. They were taught by symmetrical scaffolding. A pre-test was administered at the outset of the study. The participants worked on 10 reading comprehension passages during 10 sessions. At the end of the treatment period, a post-test was given to the participants. The results revealed that symmetrical scaffolding had a significant effect on participants’ performance in reading comprehension. In another study,
Baleghizadeh, Timcheh Memar, and Timcheh Memar (2010) aimed at exploring the effects of symmetrical versus asymmetrical scaffolding on reading comprehension of Iranian students. The study was conducted by 80 elementary male students. They were randomly assigned to the homogeneous (symmetrical) group and heterogeneous (asymmetrical) group. In the symmetrical group, the students with similar ZPDs in reading comprehension were asked to work together. While in asymmetrical scaffolding group, the students with different ZPDs in reading comprehension were grouped together. The analysis of the results indicated that the symmetrical group outperformed the asymmetrical group.

As the above literature shows, there is no agreement among the scholars on the effectiveness of symmetrical versus asymmetrical scaffolding. Furthermore, few studies, if any, have scrutinized the possible effect of soft vs. hard scaffolding on reading comprehension ability of Iranian EFL learners. In line with the above arguments, the purpose of the present study was to clarify the possible effects of soft and hard scaffolding on reading comprehension ability of Iranian EFL learners in symmetrical vs. asymmetrical groups. The following research questions were formulated to achieve the research purposes:

(1) Does soft scaffolding have any effect on Iranian EFL learners’ reading comprehension ability in symmetrical group?
(2) Does soft scaffolding have any effect on Iranian EFL learners’ reading comprehension ability in asymmetrical group?
(3) Does hard scaffolding have any effect on Iranian EFL learners’ reading comprehension ability in symmetrical group?
(4) Does hard scaffolding have any effect on Iranian EFL learners’ reading comprehension ability in asymmetrical group?
(5) Is there any significant difference between the effect of soft scaffolding on Iranian EFL learners’ reading comprehension ability in symmetrical group and asymmetrical groups?
(6) Is there any significant difference between the effect of hard scaffolding on Iranian EFL learners’ reading comprehension ability in symmetrical group and asymmetrical groups?

3. Method

3.1. Participants

The research data were obtained from a sample of 120 intermediate EFL students, which was, in turn, recruited from a population of 400 EFL students at a famous English language institute in Iran, named Iran Language Institute (ILI), Tabriz Branch. They were all female learners within the age range of 18 to 40. The participants were selected on the basis of their proficiency test scores. Those scoring one standard deviation above and below the mean were selected. Afterwards, the selected participants were randomly assigned into five groups of equal number, each containing 24 participants. There were four experimental groups as soft symmetrical scaffolding group (SSSG), soft asymmetrical scaffolding group (SASG), hard symmetrical scaffolding group (HSSG), hard asymmetrical scaffolding group (HASG) and one control group.

In order to assign the participants in symmetrical and asymmetrical groups, they had to be divided into two groups of high and low achievers based on the size of their score on the reading pre-test. Those whose scores fell one standard deviation below the mean were considered as low achievers and those whose scores fell one standard deviation above the mean were considered as high achievers. In symmetrical groups, the pairs were homogenous. In other words, two low score students or two high score students were paired together, whereas in asymmetrical groups, the pairs were heterogeneous, a participant with the high score was paired with one with a low score. There were two symmetrical groups, SSSG and HSSG, and two asymmetrical groups, SASG and HASG.
3.2. Instruments
The following instruments were used to obtain the research data:

(1) Preliminary English Test (PET) which is a standardized Cambridge test. The test includes four sections: reading, writing, listening, and speaking. In the present study, however, the speaking section of the PET test was removed due to the limitations imposed by the institute officials. This test was used for checking the homogeneity of the participants in terms of language proficiency. The reliability of the PET test, calculated through Cronbach alpha, turned out to be 0.81.

(2) Reading Comprehension Pre-and Post-Tests: Having established homogeneity among the groups in terms of their language proficiency, the researcher gave them a pre-test of reading comprehension to assess their initial performance on reading comprehension before the treatment. The reading comprehension test was developed by the researcher. It consisted of four reading comprehension passages followed by 30 multiple choice items. The passages were selected from different versions of PET. Since the number of questions was 30 and the treatment took almost 3 months, the same test was used as pre- and post-test. The issues of reliability and validity of this test were assured through a pilot study. To validate the obtained scores from test three professional test designers checked the test and validated it. Reliability of the test also was estimated 0.69 through Cronbach Alpha coefficient.

3.3. Procedure
In the current study, firstly, as mentioned in the previous section, PET was administered to a pool of 400 learners to select 120 homogeneous participants. In order to do so, those whose scores fell one standard deviation above and below the mean were selected as the participants of the study. Before the treatment, a pre-test of reading comprehension was given to all groups to check their initial performance in reading comprehension. It was an important step to make sure participants were homogenous regarding their reading ability as well as their general proficiency. Based on the size of the score, each participant gained on the pre-test, they were assigned to symmetrical and asymmetrical groups. Those above and below the mean were considered as high and low, respectively. In symmetrical groups, two low score students or two high score students were paired. In asymmetrical groups, a participant with a high score was paired with one with a low score. So the selected participants were randomly assigned into five groups, one control and four experimental groups. As mentioned earlier, the experimental groups comprised two symmetrical groups, SSSG and HSSG, and two asymmetrical groups, SASG and HASG.

The experimental groups were exposed to different treatments for 20 sessions. In SSSG and SASG, which were soft scaffolding groups, the teacher closely monitored the performance of the students during the tasks and provided prompts that were generated just-in-time according to specific student needs. Soft scaffolds are rooted in social interactions, whether they are student-to-student or student-to-teacher (Vygotsky, 1978). Such scaffolding requires teachers to continuously diagnose the understandings of learners and provide timely support based on student responses. The only difference between these two groups was in arrangement of the participants. In SSSG the participants were paired with their symmetrical peers, whereas in SASG the one above and one below the mean gainers were paired together. Apart from this, all other procedures were kept exactly the same in these two groups. In soft scaffolding groups, the participants received constant support from the side of the teacher. Each session they were given some tasks to do collaboratively. The teacher observed the students carefully and aided them whenever necessary. For instance, in the pre-reading phase, a list of new words and phrases was given to the participants, and they were asked to match them together. The Teacher monitored the course of action and provided the needed support in the case of difficulty by means of different techniques, such as using pictures, graphics, etc. In these two experimental groups, the role of the teacher as an active member in class activities was highlighted.
In HSSG and HASG, the teacher, however, planned some support procedures beforehand based on students’ difficulties with a task. She made an effort to foresee the possible challenging parts based on her experience in other similar settings and planned how to handle them before the class. For example, the teacher used some photos, charts or graphic organizers or provided explanations for new words to lend a hand to the students and support them in the course of the reading activity. Actually, hard scaffolds are a type of pre-planned guidance. Hard scaffolds can be embedded within learning contexts to support and scaffold students when they face difficulties handling a given task (Cramer & Castle, 1994; Simons, Klein, & Brush, 2004).

In contrast to the experimental groups who worked collaboratively, the participants in the control group worked individually in a completely traditional teacher-centred setting. The treatment lasted about three months, which is one semester in the institute. The classes were held two sessions a week, 1 h and 45 min each session. After the treatments, a post-test of reading comprehension was administered to all groups to measure their reading comprehension performance. The results obtained from the test were analysed using SPSS.

3.4. Design
This study was a quasi-experimental one. The independent variables of the study were hard and soft scaffolding, and the dependent variable was reading comprehension ability. It should be noted that two different educational conditions were investigated in the current study as symmetrical and asymmetrical conditions.

4. Results
The test scores of the control and experimental groups were analysed using SPSS. Table 1 indicates the descriptive statistics of the experimental and the control group on the reading pre-test. As can be seen in Table 1, the mean and standard deviation of the control group were 20.91 and 2.65. The same measures for the SSSG were 21.08 and 2.99. SASG had a mean of 21.04 and a standard deviation of 3.05. HSSG and HASG had means of 21.08 and 21 and standard deviations of 2.51 and 2.46, respectively.

One-way ANOVA was utilized to get a meaningful guarantee for the homogeneity of the participants’ reading comprehension level on pre-test. In order to run ANOVA, first, the homogeneity of variances was checked. Table 2 shows the equality of variances \[ F (4, 115) = 0.398, p = .80 > 0.05 \] on the pre-test, so ANOVA can be applied.

Table 3 shows the results of ANOVA for participants’ performance on the pre-test.

As Table 3 shows the difference between the groups in their pre-test results was not statistically significant \( F = .015, p = 1 > .05 \). Therefore, it was concluded that there was no statistically significant difference among the groups prior to the study.

A post-test of reading comprehension was administered to the participants to measure their reading comprehension after the treatment. As Table 4 shows, the measures of central tendency (mean) of the control, SSSG, SASG, HSSG and HASG were 21.04, 22.83, 25.01, 24.87 and 25.80, respectively. The standard deviation of the control group was 2.18. The experimental groups of SSSG, SASG, HSSG and HASG had standard deviations of 1.86, 3.05, 2.4 and 2.34, respectively.

To see whether the differences in mean scores were significant or not, the researcher submitted the data to a one-way ANOVA test. First, the homogeneity of variances was checked. Table 5 shows the equality of variances \( F (4, 115) = 1.155, p = .33 > 0.05 \) on the post-test, so ANOVA can be applied.

The results of ANOVA for the participants’ post-test are seen in Table 6.
| Group   | N | Mean | SD  | Skewness Statistic | Skewness Error | Skewness Ratio | Kurtosis Statistic | Kurtosis Error | Kurtosis Ratio |
|---------|---|------|-----|---------------------|----------------|----------------|-------------------|----------------|----------------|
| Control | 24| 20.91| 2.65| -0.039              | 0.472          | -0.08          | -0.677            | 0.918          | -0.737          |
| SSSG    | 24| 21.08| 2.99| 0.136               | 0.472          | 0.283          | -0.7              | 0.918          | -0.76           |
| SASG    | 24| 21.04| 3.05| 0.256               | 0.472          | 0.541          | -0.475            | 0.918          | -0.517          |
| HSSG    | 24| 21.08| 2.51| 0.058               | 0.472          | 0.122          | -0.265            | 0.918          | -0.288          |
| HASG    | 24| 21   | 2.46| -0.095              | 0.472          | -0.2           | -0.241            | 0.918          | -0.262          |
Table 6 shows that there was a statistically significant difference among the results of the groups’ performance on the posttest \( p < .05 \). It can be seen that \( F(4, 115) = 16.273, p = .000 \). Therefore, the five groups’ post-test results were statistically different.

In order to find out where the difference lay, Tukey HSD post-hoc comparison was employed. The Tukey HSD results are presented in Table 7.

As Table 7 shows, all four experimental groups had better post-test results than that of the control group. The results of Tukey post hoc revealed that all the experimental groups had a significant difference with the control group as the \( p \)-value for them was lower than the predetermined value (\( p < .05 \)). Comparing the experimental groups together, the results show that there was a statistically significant difference between SSSG and SASG (\( p = .00 < .05 \)), SSSG and HSSG (\( p = .02 < .05 \)), SSSG and HASG (\( p = .00 < .05 \)). In other words, the mean differences show that SASG, HSSG, and HASG had a better performance than SSSG on the post-test. Moreover, there was no statistically significant difference neither between SASG and HSSG (\( p = .78 > .05 \)) nor between SASG and HASG (\( p = .83 > .05 \)). Besides, there was a statistically significant difference between HASG and HSSG (\( p = .00 < .05 \)). In fact, HASG outperformed HSSG. Put it in a nutshell, HASG and SASG did better than the other groups.

Thus, based on the findings, it can be cautiously concluded that soft and hard scaffolding improved Iranian EFL learners’ reading comprehension ability in both symmetrical and asymmetrical conditions. However, based on the findings, hard and soft scaffolding were more effective in asymmetrical conditions than symmetrical ones in the improvement of the reading comprehension ability of the participants.

5. Discussion

The current study was based on Vygotsky’s SCT (1978) and investigated the possible effects of applying two different scaffolding types, soft and hard, on reading comprehension ability of EFL learners in symmetrical and asymmetrical conditions. The results of one-way ANOVA and the Tukey HSD test revealed that the groups receiving soft and hard scaffolding in asymmetrical groups outperformed those in the symmetrical groups and the control group. In other words, the results showed that both soft and hard scaffolding had a positive effect on Iranian EFL learners’ reading comprehension ability in asymmetrical groups more than symmetrical ones. These findings are supported by the general paradigm of scaffolding. Similarly, hard scaffolds have, also, been found to assist learners in reflection (Davis & Linn, 2000), information seeking (Wolf, 2000), problem-solving processes (Cho & Jonassen, 2003; Hannafin, Land, & Oliver, 1999), task constraint (Cho & Jonassen, 2003; Simons et al., 2004), and concept assimilation (Saye & Brush, 2002). However, some researchers suggested that students lack meta-cognitive awareness to apply scaffolds strategically (Land & Hannafin, 1997; Oliver & Hannafin, 2000).
Table 4. Descriptive statistics of the five groups on reading post-test

| Group  | N  | Mean | SD | Skewness   | Kurtosis   |
|--------|----|------|----|------------|------------|
|        |    |      |    | Statistic  | Error      | Statistic | Error | Ratio |
| Control| 24 | 21.04| 2.18| -.372      | .472       | -.788     | .017   | .918  | .018  |
| SSSG   | 24 | 22.83| 1.86| -.385      | .472       | -.815     | -.807  | 918   | -.879 |
| SASG   | 24 | 25.01| 3.05| .256       | .472       | .542      | -.475  | .918  | -.517 |
| HSSG   | 24 | 24.87| 2.4 | -.415      | .472       | -.879     | .213   | .918  | .232  |
| HASG   | 24 | 25.80| 2.34| -.444      | .472       | -.94      | -.61   | .918  | -.664 |
All in all, it can be concluded that scaffolding is an effective way to improve reading comprehension ability in EFL settings. The findings of this study are in line with that of other researchers like Bassiri (2012) who found that the learners who were treated with scaffolding strategies achieved higher reading comprehension scores on the post-test. Bassiri (2012) pointed out that scaffolding boosts learning from the text. The results are also in agreement with the one conducted by Safadi.

### Table 5. Levene’s F results to check the homogeneity of the variances on post-test

| Levene Statistic | df1 | df2 | Sig. |
|------------------|-----|-----|------|
| 1.155            | 4   | 115 | 0.334|

### Table 6. ANOVA results of the five groups on reading post-test

| Sum of Squares | df  | Mean Square | F    | Sig.  |
|----------------|-----|-------------|------|-------|
| Between Groups | 375.117 | 4          | 93.779 | 16.273 | 0.000 |
| Within Groups  | 662.750 | 115        | 5.763  |       |       |
| Total          | 1037.867 | 119        |       |       |       |

### Table 7. Post-Hoc Tukey HSD test of the groups’ scores on the reading post-test

| (I) Group | (J) Group | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |
|-----------|-----------|-----------------------|------------|------|------------------------|
|           | Control Group | SSSG                  | −1.7916*   | .69,300 | .001       | −4.6707    | −2.8293    |
|           | SSSG       | SASG                  | −3.9710*   | .69,300 | .000       | −5.1290    | 3.7123     |
|           | SSSG       | HSSG                  | −3.8333*   | .69,300 | .031       | −5.9623    | −1.1210    |
|           | SSSG       | HASG                  | −4.7600*   | .69,300 | .002       | −7.5873    | −1.9460    |
| SSSG      | Control Group | SASG                  | 1.7916*    | .69,300 | .001       | 1.8293     | 4.6707     |
|           | SASG       | HSSG                  | −2.1867*   | .69,300 | .000       | −3.9623    | −1.3213    |
|           | SASG       | HASG                  | −2.0456*   | .69,300 | .021       | −2.1213    | 2.6290     |
|           | HSSG       | Control Group | 3.9710*    | .69,300 | .000       | 3.7123     | 3.1290     |
|           | HSSG       | SSSG                  | 2.1867*    | .69,300 | .000       | 6.4623     | −2.6210    |
|           | HSSG       | SASG                  | .14,621    | .69,300 | .781       | 5.7540     | −1.9127    |
|           | HSSG       | HASG                  | −.7987     | .69,300 | .831       | 6.3790     | −2.5377    |
| SSSG      | Control Group | HSSG                  | 3.8333*    | .69,300 | .031       | 1.2100     | 3.9623     |
|           | SSSG       | SASG                  | −2.0456*   | .69,300 | .021       | −2.6290    | 1.2123     |
|           | SSSG       | HASG                  | −1.4621    | .69,300 | .781       | 1.9127     | 5.7540     |
|           | SASG       | Control Group | 2.0456*    | .69,300 | .010       | 2.5457     | 1.2957     |
|           | SASG       | SSSG                  | −1.4621    | .69,300 | .010       | 1.9127     | 5.7540     |
|           | SASG       | HASG                  | −.9333*    | .69,300 | .006       | −2.5457    | 1.2957     |
| SASG      | Control Group | HSSG                  | 4.7600*    | .69,300 | .002       | .7460      | 4.5873     |
|           | SASG       | SSSG                  | 2.9700*    | .69,300 | .010       | −2.0040    | 1.8373     |
|           | SASG       | HSSG                  | .7987      | .69,300 | .831       | 2.5377     | 6.3790     |
|           | HASG       | Control Group | 4.7600*    | .69,300 | .002       | 1.2957     | 2.5457     |
|           | HASG       | SSSG                  | 2.9700*    | .69,300 | .010       | −2.0040    | 1.8373     |
|           | HASG       | SASG                  | .7987      | .69,300 | .831       | 2.5377     | 6.3790     |
|           | HASG       | HSSG                  | .9333*     | .69,300 | .006       | −1.2957    | 2.5457     |

* The mean difference is significant at the 0.05 level.
and Rababah (2012) who perceived that there were significant differences in reading achievement of the experimental group who were instructed by scaffolding instructions. The findings of their study showed a noticeable progress of the participants’ reading comprehension. Another study conducted by Huggins and Edwards (2011) signified that scaffolding improves reading comprehension ability of the students. They suggested that providing help and support for the learners through scaffolding creates an interactive environment. The same results were obtained in the current study as well. Scaffolding leads to a great deal of interaction. As participants are put into pairs they have to collaborate and interact with each other. Based on the results of these studies it is recommended to use scaffolding strategies in classes. The use of strategies such as introducing new words or engaging questions can activate the learners’ prior knowledge.

Similarly, the findings also corroborate those of Kusumawati (2018) who found that scaffolding learning is an effective method to improve the English proficiency of the students of Mechanical Engineering Program in the first semester. The present study also confirms what Ghasedi et al. (2018) found in a study conducted within the sociocultural framework regarding the efficacy of symmetrical and asymmetrical scaffolding in improving the speaking ability of Iranian EFL learners. The results demonstrated that symmetrical and asymmetrical scaffolding significantly affected speaking subcomponents, especially complexity and fluency.

However, the findings contradict to those of Baleghizadeh et al. (2010) who came up with different results regarding the issue of scaffolding in symmetrical vs. asymmetrical learning conditions. They found that the SS group did better than the AS group in reading comprehension. The incompatibility between the present study and the study done by Maftoon and Ghafoori (2009) is that despite the fact that the current study showed that the participants in AS group outperformed those in SS group, Maftoon and Ghafoori (2009) found that there was no statistically significant difference between the SS and AS groups. Nevertheless, it must be borne in mind that they investigated the participants’ writing ability and not reading comprehension.

6. Conclusions
This study attempted to investigate the effect of hard and soft scaffolding on reading comprehension ability of intermediate EFL learners in symmetrical and asymmetrical conditions. The findings of the study revealed that using hard and soft scaffolding is significantly effective in better comprehension and understanding of the reading texts in the post-test. The findings of the study also indicated that the trained learners in the experimental group could understand the reading texts in the post-test better than the control group. This meant that scaffolding was an effective way for improving the reading comprehension, making the reading enjoyable for learners and thus, motivating them.

The findings obtained from this study lead to some implications which are beneficial for language teachers and learners in an EFL context. Different types of instructional scaffolding techniques can be administered in English institutes and schools. Moreover, the result of the present study may be beneficial to syllabus designers so as to take soft and hard scaffolding into consideration for teachers in their classrooms. Material designers can predict problematic areas of the textbooks and prepare some remedies in teacher’ guides. In this way, less experienced teachers, as well as more competent ones, can benefit from scaffolding strategies in their classes. Hard scaffolding is easier for syllabus designers to design and plan. In planning course book they can think of peripheral educational materials to be included in teachers’ guides to help teachers act more effectively in their classes.

The findings of the current study may encourage teachers, who still believe in their own traditional techniques in teaching reading, to shift their attitudes and follow some modern and practical techniques. Different scaffolding techniques have been implied in order to improve the learners’ reading comprehension ability in different parts of the world, and the results have been stunning.

Most learners spend an enormous amount of time figuring out how to deal with a text while reading it. It has been proved that encouraging cooperation and providing support allows the
learners to focus on the comprehension process more attentively and do not spend time on determining the meaning of each word during the reading. As a result, this procedure improves the reading comprehension. By providing support for the learners during the task of reading texts, there would be no interruption during the reading. It reduces the reading time and helps the learners to acquire the language. The use of scaffolding and collaborative work makes the reading enjoyable and motivates the learners. It provides an interesting class which captures students’ interest. As a result, it helps to achieve a better comprehension.

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Author details
Haleh Mojarrabi Tabrizi
E-mail: hmotab@yahoo.com
ORCID ID: http://orcid.org/0000-0001-7891-0715

Biook Behnam
E-mail: behnam_biook@yahoo.com

Mahnaz Saeidi
E-mail: mnsaeidi@yahoo.ca

1 Department of English, Tabriz Branch, Islamic Azad University, Tabriz, Iran.

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Correction
This article has been republished with minor changes. These changes do not impact the academic content of the article.

References
Abdul-Majeed, M. A., & Muhammad, N. M. (2015). The effect of using scaffolding strategies on EFL students’ reading comprehension achievement. Arts Journal, 3 (1), 91–118.

Ableeva, R. (2010). Dynamic assessment of listening comprehension in second language learning (Unpublished PhD Thesis). Pennsylvania State University, Pennsylvania.

Anderson, R. C., Hiebert, E. H., Scott, J. A., & Wilkinson, J. J. (1985): Becoming a nation of readers: The report of the Commission on Reading (Contract No. 400-83-0057). Washington, DC: National Institute of Education. Retrieved from http://www.eric.ed.gov/ERICWebPortal/contentdelivery/ERICServlet

Baleghizadeh, S., Timcheh Memar, H., & Timcheh Memar, A. (2010). The effect of symmetrical versus asymmetrical scaffolding on English reading comprehension of EFL learners. Studies in Language and Literature, 1(7), 104–111.

Bassiri, M. (2012). The impact of scaffolding as a strategy for teaching reading on the motivation of Iranian L2 learners. British Journal of Social Sciences, 1(1), 32–46. Retrieved from http://www.bojss.baar.org.uk/current-issue.html

Cho, K., & Jonassen, D. H. (2003). The effects of argumentation scaffolds on argumentation and problem solving. Educational Technology Research and Development, 50(3), 5–22. doi:10.1007/BF02505022

Cramer, E. H., & Castle, M. (1994). Developing the love of reading. Newark, DE: International Reading Association.

Davis, E. A., & Linn, M. C. (2000). Scaffolding students knowledge integration: Prompts for reflection in KIE. International Journal of Science Education 22, 819–837. doi:10.1080/095006900412293

Dillenbourg, P. (1999). What do you mean by collaborative learning?. In P. Dillenbourg (Ed.), Collaborative learning: Cognitive and computational approaches (pp. 1–19). Oxford: Elsevier.

Ghasedi, P., Okati, F., Mashhady, H., & Fallah, N. (2018). The effects of symmetrical and asymmetrical scaffolding on speaking complexity, accuracy, and fluency. Indonesian EFL Journal, 4(1), 1–10. doi:10.25134/ieflj.v4i1.793

Granott, N. (1993). Patterns of interaction in the co-construction of knowledge: Separate minds, joint effort, and weird creatures. In R. H. Wozniak & K. W. Fischer (Eds.), Development in context: Acting and thinking in specific environments (pp. 183–207). Hillsdale, NJ: Erlbaum.

Hannafin, M., Land, S., & Oliver, K. (1999). Open learning environments: Foundations, methods, and models. In C. Reigeluth (Ed.), Instructional design theories and models (Vol. II, pp. 115–140). Mahwah, NJ: Erlbaum.

Harmer, J. (2001). The practice of English language teaching. Essex: Pearson Education.

Huggins, G. E., & Edwards, R. (2011). Scaffolding to improve reading comprehension and to write a scholarly research paper. International Journal of Humanities and Social Science, 1(16), 30–36.

Izanlu, M., & Feyli, M. (2015). The effects of symmetrical and asymmetrical scaffolding on university students’ grammar acquisition. Journal of Advances in English Language Teaching, 3(6), 106–115.

Khosravi, S. K. (2017). The effect of symmetrical scaffolding on the reading comprehension of Iranian EFL learners. International Journal of Psychological and Brain Sciences, 2(6), 95. doi:10.11648/j.ijpbs.20170204.12

Kusumawati, A. J. (2018). Scaffolding learning in reading and writing skill in English for mechanical engineering. In Proceedings of the 2018 The 3rd International Conference on Information and Education Innovations (pp. 78–82). London: ACM. ISBN: 978-1-4503-6440-9. doi:10.1016/j.vaoa.2017.07.005

Land, S. M., & Hannafin, M. J. (1997). Patterns of understanding with open-ended learning environments: A qualitative study. Educational Technology Research and Development, 45(2), 47–73. doi:10.1007/BF02299524

Macaro, E. (2003). Teaching and learning a second language: A guide to recent research and its applications. London: Continuum.

Mafaoon, P., & Ghofoori, G. (2009). A comparative study of the effect of homogeneous and heterogeneous collaborative interaction on the development of EFL learners’ writing skill. The Journal of Applied Linguistics, 2(1), 128-158.

Oliver, K., & Hannafin, M. J. (2000). Student management of web-based hypermedia resources during open-ended problem solving. The Journal of Educational Research, 94(2), 75–92. doi:10.1080/0022067009598746
Piaget, J. (1960). The general problem of the psychobiological development of the child. In J. Tanner & B. Inhelder (Eds.), Discussions on child development (Vol. 4, pp. 3–27). London: Tavistock.

Pishghadam, R., & Ghadiri, S. (2013). Symmetrical or asymmetrical scaffolding: Piagetian vs. Vygotskian views to reading comprehension. Journal of Language and Literacy Education, 7(1), 49–64.

Poorahmadi, M. (2009). The effect of employing scaffolding strategies and classroom tasks in teaching reading comprehension. Journal of Teaching English as a Foreign Language and Literature, 1(3), 87–106.

Rezaee, A. A., Morefat, H., & Saeedakhtar, A. (2015). Symmetrical and asymmetrical scaffolding of L2 collocations in the context of concordancing. Computer Assisted Language Learning, 28(6), 532–549. doi:10.1080/09588221.2014.889712

Safadi, E., & Rababah, G. (2012). The effect of scaffolding instruction on reading comprehension skills. International Journal of Language Studies, 6, 2.

Sangin, M., Molinari, G., Nüssli, M. A., & Dillingenbour. P. (2008). Knowing what the peer knows: The differential effect of knowledge awareness on collaborative learning performance of asymmetric pairs. In European Conference on Technology Enhanced Learning (pp. 384–396). Berlin, Heidelberg: Springer. doi:10.1177/1753193408089050

Seje, J. W., & Brush, T. (2002). Scaffolding critical reasoning about history and social issues in multimedia-supported learning environments. Educational Technology Research and Development, 50(3), 77–96. doi:10.1007/BF02505026

Simons, K. D., Klein, J., & Brush, T. (2004). Instructional strategies utilized during the implementation of a hypermedia, problem-based learning environment: A case study. Journal of Interactive Learning Research, 15, 213–233.

Snow, C. (2002). Reading for understanding: Toward an R & D Program in reading comprehension. Washington, D. C.: Rand Corporation.

Talley, P. (2014). Students’ responses to scaffolded learning in the Asian university ESL classroom. International Journal of Business and Social Science, 5(3), 235–244.

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.

Wachyunni, S. (2015). Scaffolding and cooperative learning effects on reading comprehension and vocabulary knowledge in English as a foreign language (Unpublished PhD thesis). University of Groningen, Groningen.

Wolf, S. E. (2000). The Big Six Information Skills as a metacognitive scaffold in solving information-based problems (Unpublished doctoral dissertation), Arizona State University, Tempe, Arizona.

Wood, D., Bruner, J., & Ross, G. (1976). The role of tutoring in problem-solving. Journal of Child Psychology and Psychiatry, 17, 89–100.

Yu, G. (2004). Perception, practice, and progress: Significance of scaffolding and zone of proximal development for second or foreign language teachers. Asian EFL Journal, 6(4), 1–24.

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