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Reading Comprehension in a Sociocultural Context: Effect on Learners of Two Proficiency Levels

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Abstract

The present study aimed at investigating the possible effect of implementing sociocultural techniques on reading comprehension development of Iranian EFL learners. The focus of this research has been on the impact of two different teaching techniques (scaffolding and non-scaffolding) and learners’ proficiency levels on the reading comprehension development of the learners. Ninety-five non-English major students in Mazandaran University and Islamic Azad University participated in this study. A Nelson English language test and a researcher-made reading comprehension test were used as data collection instruments of this study. The results of the study indicated that the scaffolding techniques (peer and teacher scaffolding) led to better reading comprehension development compared to the non-scaffolding group. It was also shown that the proficiency level of the learners played a determining role in reading comprehension development of the two groups participating in this study and that the low proficiency learners outperformed the high proficiency ones. The result suggests that the high proficiency learners gain more than the high proficiency learners although this superiority is not due to the teaching techniques implemented in this study, as revealed in the split-plot ANOVA analysis.

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1. Introduction

For many years reading has been investigated purely from a cognitive perspective and a great deal of research has focused on the cognitive aspect of reading. For those who are working in this area, reading is considered as a receptive skill and the central question is what cognitive processes underlie and account for success and failure in learners’ attempt to master the second/foreign language in general and second/foreign language reading in particular (King, 1987; Rueda, MacGillivray, Monzo, & Arzubiaga, 2001; Segalowitz & Lightbown, 1999). For cognitive theorists and researchers the main areas of inquiry include memory, information processing approaches, attention and noticing.

The main criticism levelled against this view to language learning in general is that the social context of learning is overlooked to a great extent. Sociocultural theory tries to explain human cognitive development with regard to social and cultural development. In this theory, human cognition and its development cannot be separated from the society and culture in which it is used. As a matter of fact, sociocultural theory puts the emphasis on social aspect and regards it as primary for cognitive development to occur. Based on the tenets of sociocultural theory, social interaction plays a fundamental role in the development of cognition and learning occurs through participation in social or cultural context. In Vygotsky’s view, learning does not occur in isolation. Instead it is strongly influenced by social interaction which takes place in meaningful contexts. In other words, the social interaction with more knowledgeable and capable others and the environment, impacts their ways of thinking and interpreting situations (Packer & Goicoechea, 2000).

Zone of Proximal Development (ZPD) was proposed by Vygotsky as a reaction to the accepted belief in psychology that development is past development or what a person can do alone. For him development is future development or the potential progress a person makes with others assistance. Vygotsky (1978) proposed that every child has a zone of actual development and a zone of proximal development. The zone of actual development is defined by what a child can accomplish on his/her own, or “a child’s mental functions that has been established as a result of certain already completed developmental cycles” (p. 86). However, the zone of proximal development occurs when children are faced with a task they cannot accomplish on their own but need the help of a teacher/expert/capable other to complete/comprehend the task. Vygotsky suggested that the zone of proximal development defines “those functions that have not yet matured but are in the process of maturation, functions that will mature tomorrow but are currently in an embryonic state” (p. 86). Furthermore, Vygotsky stated that we can teach new things to students only when they are in their ZPD. The work of Vygotsky is instrumental in planning for student success as students need to be supported in the transition from what is new and unknown to the internalization, understanding and automaticity of a task/concept.

ZPD is such an important concept in SCT because it refutes a static view of learning. Rather than evaluating students’ actual stage of development, or level of L2 proficiency, Vygotsky argues that what should be evaluated is their potential to perform with the assistance and guidance of a more knowledgeable peer. It is precisely through this engagement that the novice becomes able to perform independently and to develop an expert mediational system.

The notion of ZPD is used in conjunction with the concept of scaffolding (Guerrero & Villamil, 2000). Scaffolding is a tool to move the learner in the zone. The concept of scaffolding was first used by Vygotsky and Luria (as cited in Guerrero & Villamil, 2000) to refer to how adults introduce cultural means for children. It was then used by Bruner (1987) as a metaphor for mother’s verbal efforts to maintain conversation with a child. “Scaffolding is a type of interaction that occurs in the ZPD or that can construct it” (Ferreira, 2008, p. 11). The ZPD concept is so crucial in language teaching that it led to a variety of interpretation. For example “adult guidance” was interpreted as teacher assistance in the classroom context.

In general, through implementing a quasi-experimental design, the purpose of the present study was to determine the effect of a sociocultural-based reading instruction on reading comprehension performance of the learners as compared with a traditional reading instruction. The present study aimed at investigating the possible effect of using
scaffolding techniques on reading comprehension development across two proficiency levels (low and high) of Iranian EFL learners.

2. Research questions

1. Is there any significant difference between the performance of scaffolding and non-scaffolding groups in reading comprehension?
2. Is there any significant difference between the gain scores of high and low proficiency groups across scaffolding versus non-scaffolding groups in reading comprehension?

3. Methodology

3.1. Participants

The participants of this study were chosen from among non-English major students in Mazandaran University and Islamic Azad University. They consisted of 126 learners at the beginning of the course but some of them were excluded from the study for the following reasons: Some of the students did not participate in the pre or post-test; some others did not participate in the class sessions appropriately; and still others changed their classes or dropped the course. Finally, the participants of this study were reduced to 95 male/female students and their age range was 18-30. This study used intact groups; i.e., actual university classes. They were randomly assigned into two groups of participants - non-scaffolding and scaffolding - and each group then was divided into high and low levels of proficiency in the analysis phase of the study.

3.2. Instrumentation

3.2.1. Language proficiency test

In order to determine the level of proficiency of the two groups (non-scaffolding and scaffolding) participating in this research study, the Nelson English language test 400 B (Fowler & Coe, 1976) was administered to all learners. It consists of four parts: close passage, grammatical structures, vocabulary and pronunciation. All parts were in the form of multiple choice questions. There were 50 items all in all and the time allotted was 50 minutes. The test was pilot-tested on a similar group of ten students and the reliability of the test scores according to the KR.21 formula turned out to be .78 which was suitable for this study.

3.2.2. Reading comprehension test

As this study aimed to investigate the effect of a sociocultural-based model of reading on students’ reading comprehension ability, a test of reading was also used. This test of reading comprehension was administered to learners at the beginning of the course (pre-test) to determine their reading comprehension ability. The same test was given to learners at the end of the course to determine their improvement after the intervention.

In developing the test of reading comprehension five passages were selected from the reading section of books two and three of the New Interchange series. The number of words in the selected five passages ranged from 257 to 295 words. Six items were developed for each passage and all in all there were thirty items for all five passages. Each item carried one point. The nature of the items in terms of recognizing main ideas, vocabulary knowledge, and inferring was the same for all passages as they are the most widely used skills in reading comprehension. The reliability of the reading test was also taken care of at the piloting stage through the K-R21 formula which turned out to be .81 which was suitable (Bachman, 1990) for the purpose of this study.

3.3. Data collection procedure

The present study aimed at investigating the possible effect of a sociocultural-based model on reading
performances of two proficiency levels (low and high) of Iranian EFL learners. To these ends, first the Nelson test was administered to the two groups of students to determine their proficiency levels. Two groups of low and high English language proficiency were identified in each group (non-scaffolding and scaffolding) based on the Nelson test. It is worth mentioning that during the course the groups were not divided into high and low learners. Those students whose scores were below +1 standard deviation on the normal distribution curve were taken as low and those whose scores were above +1 standard deviation as high group. So, there were two groups of learners one consisting of 50 and the other 45 learners, in which each group was then divided into low and high levels of proficiency in the analysis phase of this study.

Then, to find out the current reading comprehension ability of the participants, the reading comprehension test developed by the researcher was administered as pretest. After the pretest, the scaffolding group received reading comprehension instruction based on sociocultural theory of learning and the non-scaffolding group received traditional reading instruction. Half of the scaffolding group received teacher scaffolding and the other half received peer scaffolding. The teacher scaffolding techniques used in this study followed the three mechanisms of effective help in the ZPD proposed by Aljaafreh and Lantolf (1994). Based on Vygotsky’s theory, Aljaafreh and Lantolf stated that for intervention to be effective within the learners’ ZPD, it should be:

1. Graduated: starting with help which is more implicit and gradually becomes more specific until the appropriate level is reached
2. Contingent: help should be offered only when it is needed and withdrawn as soon as the novice shows signs of self-control and ability to function independently
3. Dialogic: discovering the learner’s ZPD is a dialogic activity which is undertaken by both interacting participants (p. 468).

As the main tenet of peer scaffolding is to unleash students from the teacher-fronted classroom (Wilson, 2003), no instruction was given to students in the peer scaffolding group. However, as the learners of this study were unfamiliar with the instructional technique used in this study and as they were, to a great extent, unwilling to do the tasks collaboratively, the tutor tried to make some minor comments at the initial sessions of the course for peer scaffolding group. For this reason, students were given some information about how to scaffold each other.

The non-scaffolding group was an instructor-centered model. In this model the instructor provided and controlled content, while the students were more passive recipient of information. In this instructional model the instructor had students read the text out loud in the class and lectured on the plot of the text. The instructor was responsible to conclude with comprehension questions concerning the text. Learners were asked to read the tasks carefully and work them out individually. Few pair or group works were done and they had hardly cooperated in the process of reading comprehension and doing the tasks. The instruction or intervention in both groups lasted for ten weeks while students participated one session per week and they were required to take the post-tests of reading comprehension at the end of the study.

4. Results and discussion

In order to investigate how EFL learners’ text comprehension can be affected by different teaching techniques (scaffolding and non-scaffolding), the data collected from the two groups was analysed using independent-sample t-test on the gain score of the scaffolding and non-scaffolding groups from pre to posttests. Table 1 presents the mean scores and standard deviations of the correct responses for the two groups before and after the intervention as well as the gain score mean of the two groups.
Table 1. Mean Scores, SDs and the Gain Score Means of the Two Groups in Pre and Posttests of Reading Comprehension

<table>
<thead>
<tr>
<th>Groups</th>
<th>Pretest Mean</th>
<th>SD</th>
<th>Posttest Mean</th>
<th>SD</th>
<th>Gain score Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-scaffolding</td>
<td>15.22</td>
<td>5.47</td>
<td>15.98</td>
<td>4.90</td>
<td>.76</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>13.82</td>
<td>5.79</td>
<td>18.76</td>
<td>4.67</td>
<td>4.92</td>
</tr>
</tbody>
</table>

To answer the first research question or to see whether the difference in the gain score means of the non-scaffolding (M=.76) and scaffolding (M=4.92) groups is meaningful, an independent-sample t-test was run on the gain score of the two groups (Table 2).

Table 2. Independent-Sample t-Tests on the Gain Score of the Two Groups from Pre to Posttests of Reading Comprehension

<table>
<thead>
<tr>
<th></th>
<th>Levene's test</th>
<th>F</th>
<th>sig</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain score</td>
<td>.42</td>
<td>.51</td>
<td>5.05</td>
<td>93</td>
<td>.00</td>
<td></td>
</tr>
</tbody>
</table>

The result reveals that there is a statistically significant difference between the scores obtained from the two group as the p value is less than .05 (.00 < .05). The scaffolding group which received peer and teacher scaffolding in their reading sessions outperformed the non-scaffolding group. Their reading mean score increased dramatically from 13.82 to 18.76 whereas the non-scaffolding group mean rose from 15.22 to 15.98 which is much lower than that obtained in scaffolding group. The mean difference and the meaningfulness of the difference show that the scaffolding mechanisms which were provided for the scaffolding group were much more conducive and beneficial to EFL learners’ reading comprehension ability. The above findings, therefore, indicate that the scaffolding group had better reading comprehension development from pre- to posttest, compared to non-scaffolding group of the study.

As the researcher was interested to investigate the impact of a reading intervention on the learners’ reading comprehension development, and also liked to know whether the impact is different for high and low proficiency learners, split-plot ANOVA was used for the analysis of the data. Table 3 presents the mean scores and standard deviations of the correct responses of the two proficiency groups (high and low) for the two groups of this study in pre and posttest of reading comprehension. As the overall performance shows, the mean score change of the high group was 1.62 while that of the low group was 4.32. Considering the mean score change of the two groups (non-scaffolding and scaffolding), it is clear that the scaffolding group gained much more than the non-scaffolding group and the low proficiency learners gained more than high ones. The interesting point to notice is that the low proficiency learners in non-scaffolding group also outperformed the high proficiency learners although their gain was not that much great.

Table 3. Mean and SD of Pre and Posttest of Reading Comprehension with Low and High proficiency in Non-Scaffolding and Scaffolding Groups

<table>
<thead>
<tr>
<th>Groups</th>
<th>Proficiency</th>
<th>Pretest Mean</th>
<th>S.D</th>
<th>Posttest Mean</th>
<th>S.D</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-scaffolding</td>
<td>Low</td>
<td>12.27</td>
<td>4.72</td>
<td>14.82</td>
<td>4.22</td>
<td>2.55</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>18.04</td>
<td>4.64</td>
<td>17.09</td>
<td>5.33</td>
<td>-0.95</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>15.22</td>
<td>5.47</td>
<td>15.98</td>
<td>4.90</td>
<td>0.76</td>
</tr>
<tr>
<td>Scaffolding</td>
<td>Low</td>
<td>9.72</td>
<td>3.47</td>
<td>15.60</td>
<td>3.44</td>
<td>5.88</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>17.92</td>
<td>4.62</td>
<td>21.92</td>
<td>3.46</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>13.82</td>
<td>5.79</td>
<td>18.76</td>
<td>4.67</td>
<td>4.94</td>
</tr>
</tbody>
</table>
To see whether the proficiency level of the participants has any influence on their reading comprehension development, split-plot ANOVA was conducted. The results of the split-plot ANOVA for mean scores on reading comprehension of non-scaffolding and scaffolding groups with high and low proficiency levels (Table 4) reveals that the interaction effect between the proficiency factors (high and low) and the reading comprehension performance was statistically significant and meaningful: F (1,91) = 11.88, p = 0.00. It means that the learners’ proficiency level is a determining factor in their reading comprehension performance and that low proficiency learners gained more than the high proficiency ones. To see whether the difference in the performance of the two proficiency groups is due to the teaching techniques used in this study, the interaction effect between the reading performance, teaching techniques and proficiency level is also investigated in the split-plot ANOVA. The result shows that there is not a significant interaction effect between the three factors: F (1,91) = 1.07, p = .30. It postulates that although the two proficiency levels performed differently in this study, this difference is not attributable to the teaching techniques used in this study. The influence of reading intervention on the learners’ reading comprehension development was different for learners with different proficiency levels, but it is not attributable to any teaching techniques.

In line with this result, as is shown in Table 3, the mean score change of the low proficiency level learners in both non-scaffolding and scaffolding groups are much higher than the mean change in high proficiency learners. The same result which is also indicated in the total mean change of the low group shows the superiority of lower proficiency learners in their reading comprehension compared to those of higher proficiency ones. Generally, it suggests that the low proficiency learners gain more that the high proficiency learners although this superiority is not due to the teaching techniques implemented in this study.

Table 4. Results of Split-Plot ANOVA for Mean Scores on Reading Comprehension of Non-Scaffolding and Scaffolding Groups with High and Low Proficiency Levels (Pre and Posttest).

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig</th>
<th>Partial Eta Squared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading*Proficiency</td>
<td>1.00</td>
<td>11.88</td>
<td>.00</td>
<td>.116</td>
</tr>
<tr>
<td>Reading<em>Method</em> Proficiency</td>
<td>1.00</td>
<td>1.07</td>
<td>.30</td>
<td>.012</td>
</tr>
<tr>
<td>Error</td>
<td></td>
<td>91.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Conclusion

The EFL learners found the sociocultural teaching techniques more conducive and facilitative for reading comprehension than the non-scaffolding ones. There are some plausible reasons for the superiority of scaffolding group over non-scaffolding group in reading comprehension. First, the scaffolding group had exposure to more aural input than the non-scaffolding group had, in the form of peer discussions, teacher feedback and group works. Second, the higher level of achievement may have been a consequence of the particular enthusiasm and high participation that the scaffolding students showed during the course. Finally, scaffolding group had a much greater variety of activities and opportunities in doing the tasks, which may have raised the interest of the students (Hyland & Hyland, 2006; Lantolf, 2007). These findings which are in agreement with some previous studies (Barnard & Campbell 2005; Cotheral & Cohen, 2003; Foster & Ohta, 2005; Gibbons, 2003; McCafferty, 2002), also support the superiority of using social and collaborative techniques in learning contexts.

It should also be noted that low proficiency learners gained quite more than high proficiency ones in reading...
comprehension, which can be attributed to following reasons. First, the low proficiency learners take advantage of the high proficiency learners while working cooperatively in the group discussions. Second, they make the most out of their discussion in the group and from the teachers’ feedback. Finally, the teachers’ feedback and scaffolding are much more tuned and adjusted for the low proficiency levels than the high levels. This suggests that high proficiency learners should be viewed not as superordinate that does not need guidance and help in the learning process. Rather, both high and low proficiency learners should be given the appropriate level of help and assistance until they reach the appropriate level.

In conclusion, the findings of this study recommend the use of more social and cooperative techniques in the context of language learning and teaching. It is more in favor of a collaborative learning environment which requires the presence of a peer or expert-peer that provides learners with opportunities to correct themselves and at the same time to learn the strategic processes needed for the learning of new and difficult skills. This allows EFL learners to be active constructors of their own learning environments.

References


