The Effect of Blended Teaching on Reading Strategy Use by Iranian EFL Learners
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Abstract
The present study investigated the effect of blended online and face-to-face instruction on the use of reading strategies by Iranian EFL learners. Out of 100 pre-selected learners, 60 homogeneous participants were identified as intermediate, according to their scores on the Oxford Placement Test. The participants were assigned to experimental (n=30) and control (n=30) groups. Then, a pretest was administered to assess participants’ current knowledge of reading comprehension. Both groups received a 7-session reading instruction. Whereas the experimental group was subjected to blended online environment where they could take advantage of Nicenet platform, the participants in the control group received materials, instruction and feedback through traditional methods in the classroom. After the experiment, the participants were required to take a reading comprehension test similar pretest as the post-test. In order to compare the frequency of reading strategy use by the experimental and control groups, the participants in the two groups were asked to fill out the Reading Strategies Questionnaire both before and after the experiment. The results of t-test between pre- and post-test showed that there is a significant difference between the experimental group and the control group in using the reading strategies. The findings of this study could help EFL teachers and syllabus designers gain insights into the processes learners go through when reading.

Keywords: blended learning, CALL, internet, reading comprehension, reading strategy

Introduction
There are four main skills in English, namely: listening, reading, speaking and writing. Reading is considered as one of the most significant skills since it is known to play a crucial function in receiving new information and enable learners to achieve learning success. Based on this fact, many efforts have been placed on the need for development of reading abilities among learners (Iranmehr, Erfani, & Davari, 2011). The reading strategies identified by many researchers (Cheng, 1999; Cohen, 1998; Oxford, 1990; Sheorey & Mokhtari, 2001) range from skimming a text to get the general idea, scanning a text for a specific piece of information, making contextual guesses about the meanings of unknown words, skipping unknown words, tolerating ambiguity, making predictions, confirming or disconfirming inferences, identifying the main idea, reading, and using cognates to comprehend, to more recently recognized strategies, such as activating prior background knowledge, recognizing text structure and summarizing the text. Therefore, it is necessary for learners to be able to use reading strategies appropriate for certain types of text and the reading situations in an effective and attractive rather than boring ways.

At the beginning of 1980, teaching came into use in the language classrooms with films, televisions and language labs being equipped with videos and audio cassettes. Also, some computer-assisted language Learning (CALL) software applications were introduced in the form
of drill-and-practice (Cunningham, 1998). The application of computer technology in language institutes has encouraged researchers to study its benefits and obtain effective methods that can be used to enhance language instruction and learning (Al-Jarf, 2007).

There are a number of problems associated with CALL as stated by Kritsonis and Lai (2006): a) raising instructive prices and decreasing the fairness of educational process b) Lack of knowledge in using computer for both teachers and learners c) Inability to use for all skills and d) Inability to manage unpredictable situations.

The disadvantages have evoked a search for new environments which combine the advantages of e-learning and traditional face-to-face learning environments. This new environment is known as ‘hybrid learning’ or ‘blended learning’ (Rogers, 2001). Blended Learning courses combine online and classroom learning activities and uses resources in an optimal way in order to improve student learning outcomes and to address important institutional issues (Garrison, 2004). Blended learning offers greater autonomy and flexibility. Different from classroom learning, learners could work at their own pace, as they have flexible time to work on their favorite reading sections or focus on reading tasks for individual needs. Blended learning also increases the opportunities for learners to interact with their peers. Anonymity enables learners to freely express their ideas and opinions to peers. However, relatively little research has been conducted to explore the possibility of blended learning as an instructional model for teaching and learning reading skills in EFL contexts. So, the aim of this study is to find out the influence of blended learning on the frequency of reading strategy use in EFL setting.

Based on what was stated above, an attempt has been made in this study to find appropriate answers to the following questions and test the related hypothesis:

1) What are the reading strategies commonly used by Iranian intermediate EFL learners in reading comprehension classes?
2) Does the application of blended teaching have any significant effect on the frequency of reading strategy use by Iranian EFL learners?

**H0:** Blended teaching does not have any significant effect on the frequency of reading strategy use by Iranian EFL learners.

**Literature Review**

Loew (1984) offered useful and practical suggestion for teaching reading skills. He urged language teachers to encourage students to guess, tolerate ambiguity, connect ideas, paraphrase and summarize so that they can stop spending too much time on isolated words which is not necessary to comprehend. Badr El-Deen's (2009) study tested the effectiveness of the assisted extensive reading program on developing reading comprehension strategies; skimming, scanning, guessing meaning of words in context and inference for ninth graders in Gaza governorates. The results of the post tests showed that the group which received the assisted extensive reading program was superior to the other two groups, and group one which only received strategy training achieved some progress but it was not significant when compared with the group which received both strategy training and extensive reading program.

Badawi (2009) investigated the effectiveness of using blended learning in developing prospective teachers' pedagogical knowledge and performance. The study sample included 38 EFL prospective Saudi teachers at the Faculty of Education and Arts, Tabuk University. The first group studied four TEFL units using the traditional method whereas the second group studied the identical four units using the blended learning model. The results indicated that the blended
learning model was more effective than the traditional model in developing prospective teachers' pedagogical knowledge.

Alebaikan and Troudi (2010) investigated online discussions in blended courses at Saudi universities. They noticed that involving the students in online discussions can positively affect their learning when responding to peer questions, sharing new ideas and receiving regular feedback from their instructors.

The findings of Yang’s study (2010) revealed that students could select appropriate reading strategies to go well with their own reading pace, style, and level. That is, students were able to take control of their own reading — making decisions on what, how, when, and why to read. With blended learning, students’ on-site reading could be extended by online reading activities after class for individual purposes without the restrictions of time and location.

In an effort to show the degree of the effectiveness of blended learning on the improvement of students’ learning outcomes, recent studies have shown significant results in how students integrate to face-to-face instruction with online learning (Bliuc, Ellis, Goodyear, & Piggott, 2011; Tsai, 2009; Tsai, Tsai, & Hwang, 2011).

Therefore, blended learning could be an important learning model providing students with additional activities to reinforce the learnt material.

Effective Strategies for Teaching Reading

Cunningham and Allington (2007) summarized six strategies, based on Duke and Pearson’s (2002) research as prediction, think-aloud, using text structure, using visual cues, summarization, and answering and questioning. Here are some effective reading strategies proved by researchers. These strategies are divided to some specific strategies.

Questioning

The most crucial step of thinking is asking questions. The questioning process requires readers to ask questions of themselves to construct meaning, enhance understanding, find answers, solve problems, find information, and discover new information (Harvey & Goudvis, 2000).

Prediction

Prediction refers to guessing and understanding what is coming next based on the context. Using the title, table of contents, pictures, and key words is one prediction strategy. There are 3 varieties of prediction, pre-reading, while-reading and post- (after) reading. While-reading prediction questions differ from post-reading prediction questions in that students can immediately learn the accuracy of their predictions by continuing to read the passage. In contrast, post-reading prediction questions generally have no right answers in that students cannot continue to read to confirm their predictions.

Clarification

Clarifying involves the identification and clarification of unclear, difficult, or unfamiliar aspects of a text. Clarifying provides the motivation to remediate confusion through re-reading, check comprehension by restating the information and ideas in the text, and the use of external resources (e.g., dictionary or thesaurus) (Doolittle et al., 2006).
Skimming

Skimming means reading the text quickly to get the gist or general idea and skip over the details (Beale, 2013). Skimming strategy enables the reader to decide whether a text is relevant for particular reader’s purposes, as the reader can quickly estimate the relevance of the text by skimming it.

Scanning

Scanning means reading the text carefully to get specific information hidden in the text. The focus is on the required information.

Making Connections

Duckworth (2009) confirmed that good readers make a relation between already known topics and the topic they are reading. By making connections, the students can activate their prior knowledge and connect the ideas in the text to their own experiences.

Drawing Inferences

Inferential thinking helps readers to figure out unfamiliar words, draw conclusions, develop interpretations, make predictions, and even create mental images (Harvey & Goudvis, 2000).

Think-aloud

When teachers demonstrate or model their reading processes for students through think-aloud, they often stop and predict what will happen next to show how inferring is essential for comprehending text. Think-aloud help readers to understand the thought processes of a competent reader. This is an excellent way to teach students to make inferences as they read. Thinking about how one reads is an example of using metacognition skills to improve one’s learning. It also helps the struggling reader see that proficient readers are actively engaged in the text and are not simply reading the words.

Culture and Background knowledge

It is clear that readers comprehend texts better when texts are culturally familiar. If there is a gap between the reader’s background knowledge of the subject matter or pertinent cultural knowledge and the knowledge needed to understand the reading text, the reader will face difficulties in making appropriate predictions.

Summarization

The ability to retell the key points of a text in a logical sequence and hold these details in memory is an important comprehension strategy called summarization. Summarizing may be based on a single paragraph, a section of text, or an entire passage.

Methodology

Participants

This study was conducted with 60 Iranian intermediate EFL learners consisting of 30 males and 30 females studying English at intermediate level (Top Notch series, second edition by Joan Saslow & Allen Ascher, 2011) at Kavosh English language institute. These participants were selected from a large sample of 100 EFL learners based on their performance on Oxford Placement Test (Edwards, 20007). All participants were native speakers of Persian aging between 20 and 28. They were assigned to two groups as experimental group (EG) and control group.
The experimental group received a combination of traditional and on-line reading instruction and the control group received traditional in-class instruction in order to pursue the goals of the study.

**Materials and Instruments**

The materials employed for data collection consisted of select reading books, handouts, and Nicenet platform. The instruments were OPT, pretest and posttest, and a questionnaire on reading strategies. The detailed descriptions of the materials are as follows:

**Book and Handouts**

The reading book was taught by the researchers in the summer 2014 for 7 sessions. *Select Reading intermediate level* (second edition) by Linda Lee and Erik Gunderson (2011) was used as a reading material for this course. This book consists of 14 chapters, of which, only 4 chapters were covered in class during the experiment. These chapters covered almost all reading strategies. Some handouts were also adopted from websites that corresponded to the participants’ proficiency level. These handouts mostly focused on four main reading strategies.

**Nicenet Platform**

Nicenet or Internet Classroom Assistant (ICA) is a virtual classroom where both teacher and learner can share their learning needs or anything that is not possible through normal class time. As a teacher, you can enter into site by typing the address www.nicenet.org. Clicking on “create a class” option, there is a sample procedure to follow and create a virtual classroom. After logging in, teachers can manage the administrator page.

**Oxford Placement Test**

In order to check the participants’ homogeneity in terms of language proficiency level, a version of Oxford Placement Test called Solution Placement Test (Edwards, 2007) was used in this study. The validity of the test is self-evident. This test enabled the researchers to select those learners who were compatible with conditions of the study in terms of their language proficiency level. The total score of the test was 60. Based on the rating scale, the learners who scored above 31 in grammar and vocabulary and above 8 in reading were considered as intermediate level learners.

**Pre- and Post-test**

**Pre-test**

At the beginning of the semester, learners in both groups were pretested before the instruction. A reading comprehension test functioning as pretest was selected from Practice TOEFL Tests (Arco). This test is as a preparation test for TOEFL. It is composed of five reading passages accompanied by 60 multiple-choice items selected from Practice TOEFL Tests, typically used to evaluate reading ability of the participants (see Appendix B). The test was selected on the grounds that a) its reliability and validity have already been determined and b) the passages are not too long to make learners feel bored.

**Post-test**

For the post-test, a reading test from the Practice TOEFL Test was selected, with texts similar in readability to those of the pre-test. Flesch-Kincaid Grade Level (FKGL) was used to evaluate readability of the texts. This measure is primarily based on the US school system,
ranging from 0-16. In this measure, the higher the score the more challenging the text is. The formula reads as: FKGL= \((0.39 \times ASL) + (11.8 \times ASW) – 15.59\). Where ASL is the average sentence level (the number of words divided by the number of sentences) and ASW is the average number of syllables per word (the number of syllables divided by the number of words).

The results of the independent samples \(t\)-test between texts of the pre- and post-test are presented in Table 1. Below. The two groups of texts were generally of a similar level of readability \((p>0.05)\)

<table>
<thead>
<tr>
<th></th>
<th>Pre-test texts</th>
<th>Post-test texts</th>
<th>Df</th>
<th>T</th>
<th>Sig.(2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flesch-Kincaid Grade</td>
<td>11.16</td>
<td>10.7</td>
<td>22</td>
<td>.766</td>
<td>.452</td>
</tr>
<tr>
<td>Level (0-16)</td>
<td>1.36</td>
<td>1.56</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It was not necessary to check reliability and content validity because Practice TOEFL Test is a standard test and its reliability and validity have already been determined. The results of the performance on these tests were compared to find any significant differences.

**Questionnaire on Reading Strategies**

The data for this part were collected through a questionnaire adopted from the survey of reading strategies by Mokhtari and Sheorey (2002) that was developed to measure the metacognitive awareness and perceived use of reading strategies of adolescent and adult learners of English as a second language. It, however, proved too difficult to demonstrate that every item outlined in the list would contribute to evaluate the frequency of reading strategy use. After examining each statement in detail and ruling out undesired ones, the researcher finally came up with a modified version of the list tailored to the needs of the study.

The modified reading strategy questionnaire consists of 20 statements, employing a 5-point Likert-scale (with 1 representing almost never and 5 almost always). Prior to administration of the study, the questionnaire was piloted on 27 learners of the same age, sex, and proficiency level. To ensure the content validity of the questionnaire, it was evaluated by three experienced experts in the field of Applied Linguistics research. They were three PhD holders of Applied Linguistics with more than 5 years of experience in teaching and testing. The statistical software SPSS (V20.0) was used to analyze the reliability of the statements. Satisfactory estimates of questionnaire were obtained; the overall Cronbach’s Alpha for the questionnaire was 0.846.

**Procedures**

**Data Collection**

The data collection procedure was conducted in four phases during 7 sessions in summer 2014. Phase 1 was concerned with determining the participants’ level of English language proficiency. Pre-testing and assessing strategy use of the participants constituted the second phase of the study. In Phase 3, the experiment of the study was implemented. Phase 4 characterized examining the effect of experimental phase on learners reading ability; by the questionnaire used in phase 2, the examinees were further assessed in using different strategies.
**Data Analysis and results**

**Preliminary Analyses**

A placement test was administered, and a Computer Literacy Questionnaire was subsequently used to assign the learners to two groups of control and experimental. What follows is the results of the placement test, along with the analysis of the Computer Literacy Questionnaire.

**Results of the Placement Test**

The results of the placement test are shown in the following table and the accompanying figure.

**Table 2. Descriptive Statistics for the Placement Test**

<table>
<thead>
<tr>
<th>Placement Test</th>
<th>N</th>
<th>Mean</th>
<th>Mode</th>
<th>Median</th>
<th>Std. Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100</td>
<td>41.77</td>
<td>53.00</td>
<td>43.00</td>
<td>9.58</td>
<td>25.00</td>
<td>57.00</td>
</tr>
</tbody>
</table>

The learners’ mean score on the placement test was 41.77 and their standard deviation was 9.58. This formed the basis for the selection of the targeted homogeneous sample: those who managed to obtain a score between two standard deviations above and below the mean were included in the study while the rest were excluded. Out of 100 initial participants, 60 roughly homogeneous learners were identified as intermediate based on their scores on the placement test.

**Research Question 1**

The first research question of the present study asked whether the application of blended learning has any significant effect on the frequency of use of reading strategies by Iranian EFL learners. To be able to compare the frequency of reading strategy use by the experimental and control group participants both prior to and after the implementation of the experiment, the learners in the two groups were asked to fill out the Reading Strategies Questionnaire both before and after the experiment. Each participant could receive a score ranging between 20 and 100 on this 20-item questionnaire since each questionnaire item was measured on a five-point Likert scale, giving rise to a score ranging from 1 (almost never) to 5 (almost always) for each item. The 20 items would then constitute a score between 20 and 100 for the frequency of use of reading strategies by each learner. Independent samples t-test was conducted before the experiment to capture the possible differences in the frequency of use of reading strategies by the experimental and control groups. The same statistical test was employed again to compare the two groups with regard to the frequency of use of reading strategies after the experiment. The results of these analyses are presented in the following table:

**Table 3. Descriptive Statistics Comparing Experimental and Control Group’ Frequency of Use of Reading Strategies Prior to the Experiment**

<table>
<thead>
<tr>
<th>Reading Strategies</th>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Experimental</td>
<td>30</td>
<td>43.03</td>
<td>7.99</td>
<td>1.46</td>
</tr>
<tr>
<td></td>
<td>Control</td>
<td>30</td>
<td>40.73</td>
<td>8.24</td>
<td>1.50</td>
</tr>
</tbody>
</table>
The mean score of the experimental group \((M = 43.03)\) was slightly more than the mean score of the control group \((M = 40.73)\). The value of \(p\) under the \(Sig.\) (2-tailed) column in Table 4 determines whether this difference between the two mean scores was statistically significant or not.

**Table 4. Results of the Independent-Samples t-test for Comparing Experimental and Control Group’ Frequency of Use of Reading Strategies prior to the Experiment**

<table>
<thead>
<tr>
<th>Reading Strategies</th>
<th>Equal Variances</th>
<th>Equal Variances not Assumed</th>
<th>Levene’s Test</th>
<th>T-test for Equality of Variances</th>
<th>T-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>F.</td>
<td>Sig.</td>
<td>T</td>
<td>Df</td>
</tr>
<tr>
<td>Reading Strategies</td>
<td>Equal Variances Assume d</td>
<td></td>
<td>.200</td>
<td>.65</td>
<td>1.09</td>
<td>58</td>
</tr>
<tr>
<td></td>
<td>Equal Variances not Assumed</td>
<td></td>
<td>1.09</td>
<td>7</td>
<td>57.9</td>
<td>57</td>
</tr>
</tbody>
</table>

According to Table 4, there was not a statistically significant difference in the frequency of use of reading strategies for the experimental group \((M = 43.03, SD = 7.99)\) and control group \((M = 40.73, SD = 8.24)\), \(t (58) = 1.097, p = .277\) (two-tailed). This is so because the \(p\) value was greater than the specified level of significance (i.e. .05). If the \(p\) value was less than the level of significance, the conclusion would be that the two groups were significantly different in terms of their frequency of use of reading strategies before the experiment. The results of the frequency of use of reading strategies for the experimental and control groups are graphically represented in Figure 1.
Figure 1. Mean Scores of Experimental and Control Groups for Pre-Experiment Frequency of Use of Reading Strategies

As Figure 1 displays, the mean score of the experimental group was only slightly higher than the mean score of the control group, leading one to the conclusion that the two groups were roughly homogeneous in terms the frequency of reading strategy use before the commencement of the experiment. The results of the post-experiment comparison of the experimental and control groups appear in the following tables.

Table 5. Descriptive Statistics for Comparing Experimental and Control Group’s Frequency of Use of Reading Strategies after the Experiment

<table>
<thead>
<tr>
<th>Groups</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
<th>Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experimental Group</td>
<td>30</td>
<td>62.90</td>
<td>8.37</td>
<td>1.52</td>
<td></td>
</tr>
<tr>
<td>Control Group</td>
<td>30</td>
<td>54.43</td>
<td>8.79</td>
<td>1.60</td>
<td></td>
</tr>
</tbody>
</table>

As shown in Table 5, the mean score of the experimental group ($M = 62.90$) was found to be higher than that of the control group ($M = 54.43$). Whether this difference between the mean scores of the two groups was a statistically significant one could be determined by the value of $p$ under the $\text{Sig. (2-tailed)}$ column in Table 6 below.

Table 6. Results of the Independent-Samples $t$-test for Comparing Experimental and Control Group’s Frequency of Use of Reading Strategies after the Experiment

<table>
<thead>
<tr>
<th>Levene’s Test for Equality of Variances</th>
<th>T-test for Equality of Means</th>
<th>95% Confidence Interval of the Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>F.</td>
<td>Sig.</td>
<td>T</td>
</tr>
</tbody>
</table>
Table 6. Comparison of the Use of Reading Strategies Using the Independent Samples t-Test

<table>
<thead>
<tr>
<th>Reading Strategies</th>
<th>Equal Variances Assumed</th>
<th>Equal Variances not Assumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>r</td>
<td>r</td>
<td>r</td>
</tr>
<tr>
<td>.347</td>
<td>.558</td>
<td>3.819</td>
</tr>
<tr>
<td>3.819</td>
<td>57.8</td>
<td>.000</td>
</tr>
</tbody>
</table>

It is vividly evident from Table 6 that there was a statistically meaningful difference in the frequency of use of reading strategies for the experimental group ($M = 62.90$, $SD = 8.37$) and control group ($M = 54.43$, $SD = 8.79$), $t(58) = 3.819$, $p = .000$ (two-tailed). The obtained results are also graphically shown in Figure 2 below.

![Figure 2. Mean Scores of Experimental and Control Groups for Post-Experiment Frequency of Use of Reading Strategies](image)

It is evident from Figure 2 that the mean score of the experimental group was substantially higher than the mean score of the control group, giving rise to the conclusion that the blended instruction (implemented for the experimental group) led to a considerably higher frequency of use of reading strategies.

**Discussion of results**

This section provides a specific discussion, rejecting the null hypotheses. Further, it attempts to connect each finding to the existing literature. As set at the beginning of the study, this study sought to investigate the effect of blended learning on reading strategy use. The data was submitted to different statistical analysis in order to test the following null hypothesis of the study:

H0: Blended teaching does not have any significant effect on the frequency of reading strategy use by Iranian EFL learners.

The result of the study indicated that the use of online learning along with current teaching methodologies, i.e., blended online instruction, has a significant effect on the frequency of reading strategy use by Iranian EFL learners. The frequency of using reading strategies was
measured by administrating the reading strategy questionnaire both before and after the experiment to test the hypothesis. The results showed that there was a statistically meaningful difference in the frequency of use of reading strategies for the experimental group \((M = 62.90, SD = 8.37)\) and the control group \((M = 54.43, SD = 8.79)\). So, blended instruction (implemented for the experimental group) led to a considerably higher frequency of use of reading strategies and thus the null hypothesis was rejected.

The findings of this study are in line with the findings of Chen, You, Yang and Huang (2004) who reported to have benefited from blended teaching in a remedial reading program. Yang’s study (2010) revealed also that students could select reading strategies to suit their own reading pace, style, and level.

**Conclusion**

The results obtained from blended instruction in the present study implied that although the application of technology, such as the internet and computer, has resulted in better reading performance, the interaction of the learners and teachers must be taken into account too. In other words, it is the combination of traditional and modern methodology which results in better and more fruitful learning.

As revealed in the present study as well as other studies (Bahrani, 2011; Beatty, 2003; Roed, 2003; Vinther, 2011; Wiebe & Kabata, 2010), CALL has many advantages over traditional classroom teaching and learning such as providing motivation and autonomy for learners, flexible learning, immediate and detailed feedback, reducing anxiety, and enhancing learners’ involvement and participation. To conclude, blended online reading instruction can be introduced as an effective teaching tool to help EFL learners to improve their reading strategies. However, like other empirical research, the findings of the present study are not definitive. In other words, the findings (admittedly limited) do not suggest that blended learning described in this study is the best way to improve reading skills, but rather they represent a useful construct to be employed by teachers as a basis for describing learners’ performance in reading.

**References**


