Effectiveness of a Program Based on Connectivism Theory in Developing EFL Reading Comprehension Skills of Preparatory Stage Pupils
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Abstract
The researcher aimed at investigating effectiveness of a program based on connectivism theory in developing EFL reading comprehension skills of preparatory stage pupils. To address this issue, a diagnostic test, a checklist of some reading comprehension sub-skills and a questionnaire were used to pave the way for the researcher to determine the most needed sub-skills. The researcher prepared the proposed program, a pre-post test, reflection logs and a satisfaction questionnaire. (n=62) prep-stage pupils were randomly selected to represent the participants of the study. Findings showed that there are statistically significant differences at the level of (0.01) between the mean scores of the experimental group and the control group in pre-post test in favour of the experimental group. Findings also showed that the program positively influenced the experimental group’ performance. In the light of the findings, the researcher provided some pedagogical implications and suggestions for further studies.

Key Words
Reading comprehension, Connectivism, Prep stage.
ملخص البحث:

هدفت الباحثة إلى التحقق من فعالية برنامج قائم على النظرية الترابطية في تنمية مهارات الفهم القرائي لدى تلاميذ المرحلة الإعدادية. لتحقيق هذه الغاية، تم استخدام اختبار تشخيصي وقائمة لبعض المهارات الفرعية للفهم القرائي واستطلاع للرأى لتحديدي المهارات الفرعية المطلوبة. كما أعدت الباحثة البرنامج المقترح، والاختبار القبلي، واستطلاع الرأي، واستطلاع الرأي، واستطلاع الرأي، واستطلاع الرأي. تكونت عينة البحث من 26 تلميذاً من تلاميذ المرحلة الإعدادية تم اختيارهم عشوائياً. أظهرت النتائج وجود فروق ذات دلالة إحصائية عند مستوى (0.01) بين متوسطي درجات المجموعة التجريبية والمجموعة الضابطة في الاختبار القبلي لصالح المجموعة التجريبية. كما أظهرت النتائج أن البرنامج أثر بشكل إيجابي على أداء المجموعة التجريبية.

وفي ضوء النتائج قدمت الباحثة بعض المقترحات التربوية لمزيد من الدراسات.

الكلمات المفتاحية: الفهم القرائي، الترابطية، المرحلة الإعدادية.
Introduction

Reading comprehension skills enable students to understand not only academic courses but also many life matters. Teaching reading expands students’ knowledge, skills, attitudes, and values which the reading text contains. It helps students understand information obviously. It is a core element while getting information as it makes it easier for readers to be integrated within their society. It helps readers realize economic, social and political events. Thus, it should be taught to primary school pupils as it influences their academic courses and their daily life (Papatga & Ersoy, 2016:125; Ningsih, 2017:1; Aguilera, 2014:22; Abera, 2014:1,8).

Duin & Moses (2015:33) suggested that with the emergence of technology, there has been an increasing argument about what learning goals, methods, instruments and frameworks to be used. In such era, there is a gap about people’s consideration about the nature of knowledge. Siemens and Downes sought for bridging the gap by connected and re-assigned shared nodes that occur among people and information. Modern technology facilitates accessing information as learning is not limited to formal educational institutions. By this it is meant that the structure of the connections controls the variety of experience. The nature of learning that is formulated by connections between the teacher and the students differs from that which occurs among students and learning resources Kop (2011:19).

Siemens (2005:4) set the principles of connectivism as follows;
1. Learning occurs in an environment that encourages different opinions.
2. Learning is a process of connecting knowledge sources.
3. Learning may occur in non-human devices.
4. Knowing more information is more important than information itself.
5. Decision-making is considered a learning process.

Problem of the Research
Context of the Problem

The researcher made sure of the pupils’ poor performance in reading comprehension through;
The Pilot study

To investigate the problem, the researcher administered a reading comprehension checklist and a diagnostic test. The researcher also applied a questionnaire.

Statement of the Problem

The problem of the research can be stated in the weak performance of preparatory stage pupils in reading comprehension.

Questions of the Research

The research sought to answer the following questions:

Main Question
What is effectiveness of a program based on connectivism theory in developing reading comprehension skills of preparatory stage pupils?

Sub-Questions
To answer the main questions, the researcher stated these sub-questions:
1. What are the reading comprehension sub-skills needed to developing the reading comprehension skills of preparatory stage pupils?
2. What is the effectiveness of a program based on connectivism theory in developing the reading comprehension skills on each of the six sub-skills of preparatory stage pupils?
3. What is the effectiveness of a program based on connectivism theory in developing reading comprehension skills as a whole of preparatory stage pupils?

Hypotheses of the Research

In order to answer the previous questions, the following hypotheses were formulated:
1. There is a statistically significant difference at the level of (0.01) between the mean scores of the experimental group and the control group in pre and post measurement of the reading comprehension skills on each of the six sub-skills in favor of the experimental group.
2. There is a statistically significant difference at the level of (0.01) between the mean scores of the experimental group and the control group in pre and post measurement of the reading
comprehension skills as a whole in favor of the experimental group.

Objectives of the Research
Based on the problem statement above, the research aims mainly at investigating the effectiveness of the suggested program in developing reading comprehension among prep stage pupils.

Significance of the Research
The research may be important for the following classes.
1. Preparatory stage pupils; The research may train them on understanding much more reading texts than the texts they study.
2. Curricula developing specialists; The research may benefit them by presenting additional content, evaluation, teaching methods and activities for EFL students.
3. Researchers; The research can open new horizons towards other researchers who are concerned with the same problem.

Delimitations of the Research
The research had the following delimitations:
1. Two groups of 2nd year prep year pupils.
2. A whole semester.
3. The following reading subs-skills.
   d. Skimming. e. Background knowledge. f. Word meaning.

Variables of the Research
Independent Variable
Connectivism theory.
Dependent Variables
Reading comprehension skills.

Review of Literature
Using Technology in Teaching Reading Comprehension
Zhang (2016:136) argued that using technology in teaching reading comprehension became more remarkable. Thus, having sufficient language skills and strategies is the basic upon which the reader can deal with the different texts. This literacy efficiency may take different forms as viewing a text on DVD, iPad, iPhone and other
devices and applications. Today, reading is not limited to reading printed texts and writing also is not merely using a pen and paper to write on. The Internet changed these skills greatly because in digital texts the word or the sentence can be connected to another meaning which is found on other website.

De La Cruz & Lopez (2016:1,3) stressed using technological tools and resources in education provides students with an interactive process with more opportunities to take part in, analyze and comprehend reading comprehension texts. Such resources include hardware in addition to software that provides multimedia resources and activities available to smart phone devices which leads to enhance reading comprehension.

**The Entity of the Connectivism Theory**

Downes (2017:600) implied that connectivism looks at the nature of knowledge from a different perspective. It not limited to research on networks however, it is based on research on artificial intelligence and neuroscience. As long the sentence does include the actual information, then learning will be just remembering pieces of information. If a learner wants to comprehend a sentence, he or she has to understand a language and this in return will make it a must for him/her to know information about related words as who speaks them. Knowledge is a group of connections. Acquiring connectivist manner is not that easy it is created by interactions which are continuously repeated. Thus, an active, network-based and interactive learning becomes a must more than ever (ibid:646).

Anderson & Dron (2012:8,9) defined connectivism as a network centric pedagogy and saw it as the first original distance learning theory. Accessing to a network is vital during managing connectivist models that determine education. Connectivism stresses on formulating, distributing and publishing learners’ works online. Collaboration between learners goes beyond time and place limits. Now distance learning environments are more secured. When the course ends, its content created by a student is deleted and becomes unreachable even to the student who created it.
Causes of the Emergence of Connectivism Theory

Siemens (2005:1) asserted that great changes occurred recently that changed basic concept about the nature of knowledge and schooling. People are not limited to a definite age to learn and knowledge is improving tremendously and very fast. More attention is being paid to informal learning through various ways as personal networks and communities. Learning and learning activities are associated and sometimes are the same. Both learners and organizations are learning existences so a new theory is needed to present interpretation for the relation between them. Know-where completes know-how and know-what concepts.

Renandya & Jacobes (2016:4,5) showed that how English is taught and learnt had been affected by the growing utilization of technology in education. Instead of depending on the teacher and the learning materials in textbooks, students can reach and get massive learning resources with the help of the Internet. The Internet made the resources of the target language constantly accessible. Students also can practise what have been learnt in authentic way by communicating with native speakers all over the world. Mattar (2018:202) outlined that the raise of modern technology applications and tools as Web 2.0, blogs, wikis and social media led to continuous rejection to the regular methods. Dynamic methods for teaching are needed as student-centered learning, co-creation of knowledge and peer assessment. Research Participants

(n=62) second-year-prep school pupils participated in the study. They were from 3 prep schools at Wasta and Nasser Educational Administrations.

Research Methodology

The quasi-experimental approach, pre – post treatment two groups, was used. It took 8 weeks to complete the experiment.

Instruments and Materials of the Research

The researcher prepared a checklist of reading comprehension sub-skills, a questionnaire in addition to a diagnostic test. The researcher also prepared a pre-posttest, the suggested program, weekly reflection logs and a questionnaire.
The On-line Pre-post Test

Validity of the On-line Pre post Test

The Content Validity
The researcher submitted the test to the jury members. The jury’s opinion was helpful in standardizing and validating the test. The pilot group which had the same characteristics of the experimental group was randomly selected to ensure test validity.

Internal Consistency of the On-line Pre post Test
Consistency of the pre posttest can be found between every single skill and the total score of the test. In addition, it appears in each item of a skill and the total score of each skill.

Reliability of the On-line Pre post Test
The pilot group contained (n= 30) second year prep stage pupils. To make sure of the test reliability, the same test was tested and retested.

Answer of the First Question
The first question was formulated as follows:
What are the reading comprehension sub-skills needed to developing the reading comprehension skills of preparatory stage pupils?
The following steps were followed in order to answer this question:
1. The researcher prepared a reading comprehension checklist. The jury specified 12 sub-skills.
2. In the light of the checklist, the researcher administered a diagnostic test. Results showed that the pupils had difficulty in the following reading sub – skills:
   1. Pronoun reference.
   2. Summarizing.
   4. Skimming.
   5. Background knowledge.
   6. Word meaning.

Answer of the First Hypothesis
The first hypothesis was stated as follows:
There is a statistically significant difference at the level of (0.01) between the mean scores of the experimental group and the control group in pre and post measurement of the reading comprehension skills on each of the six sub-skills in favor of the experimental group.
Table (1)

The mean score of the experimental group and the control group of reading comprehension skills separately in the on-line post test.

<table>
<thead>
<tr>
<th>Sub-skill</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>T</th>
<th>Effect size</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pronoun reference</td>
<td>Exper</td>
<td>31</td>
<td>2.35</td>
<td>.915</td>
<td>4.424</td>
<td>0.245964</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Contr</td>
<td>31</td>
<td>1.45</td>
<td>.675</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summarizing</td>
<td>Exper</td>
<td>31</td>
<td>4.71</td>
<td>2.101</td>
<td>8.487</td>
<td>0.545555</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Contr</td>
<td>31</td>
<td>1.16</td>
<td>1.003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scanning</td>
<td>Exper</td>
<td>31</td>
<td>16.35</td>
<td>4.827</td>
<td>5.928</td>
<td>0.369358</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Contr</td>
<td>31</td>
<td>9.68</td>
<td>4.003</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skimming</td>
<td>Exper</td>
<td>31</td>
<td>8.06</td>
<td>3.558</td>
<td>3.791</td>
<td>0.193241</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Contr</td>
<td>31</td>
<td>5.03</td>
<td>2.677</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Background</td>
<td>Exper</td>
<td>31</td>
<td>7.06</td>
<td>2.943</td>
<td>4.679</td>
<td>0.267337</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Contr</td>
<td>31</td>
<td>3.90</td>
<td>2.343</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>word meaning</td>
<td>Exper</td>
<td>31</td>
<td>5.48</td>
<td>2.308</td>
<td>4.242</td>
<td>0.230716</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Contr</td>
<td>31</td>
<td>3.10</td>
<td>2.119</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(df) = 2(31)-2=60

Table (2)

The mean score of the experimental group in the pre and post of reading comprehension skills separately in the on-line post test.

<table>
<thead>
<tr>
<th>Sub-skill</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pair 1</td>
<td>Pronoun reference</td>
<td>1.26</td>
<td>31</td>
<td>.773</td>
</tr>
<tr>
<td>Pronoun reference</td>
<td>2.35</td>
<td>31</td>
<td>.915</td>
<td>.164</td>
</tr>
<tr>
<td>Pair 2</td>
<td>Summarizing</td>
<td>1.35</td>
<td>31</td>
<td>1.582</td>
</tr>
<tr>
<td>Summarizing</td>
<td>4.71</td>
<td>31</td>
<td>2.101</td>
<td>.377</td>
</tr>
<tr>
<td>Pair 3</td>
<td>Scanning</td>
<td>10.74</td>
<td>31</td>
<td>4.297</td>
</tr>
<tr>
<td>Scanning</td>
<td>16.35</td>
<td>31</td>
<td>4.827</td>
<td>.867</td>
</tr>
<tr>
<td>Pair 4</td>
<td>Skimming</td>
<td>4.71</td>
<td>31</td>
<td>2.854</td>
</tr>
<tr>
<td>Skimming</td>
<td>8.06</td>
<td>31</td>
<td>3.558</td>
<td>.639</td>
</tr>
<tr>
<td>Pair 5</td>
<td>Background</td>
<td>4.58</td>
<td>31</td>
<td>2.500</td>
</tr>
<tr>
<td>Background</td>
<td>7.06</td>
<td>31</td>
<td>2.943</td>
<td>.529</td>
</tr>
<tr>
<td>Pair 6</td>
<td>word meaning</td>
<td>3.03</td>
<td>31</td>
<td>2.415</td>
</tr>
<tr>
<td>word meaning</td>
<td>5.48</td>
<td>31</td>
<td>2.308</td>
<td>.414</td>
</tr>
</tbody>
</table>

(df) = 2(31)-2=60
Table (3)
Paired Samples Test of the reading comprehension skills in the on-line pre-post test

<table>
<thead>
<tr>
<th>Sub-skill</th>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>T</th>
<th>Sig.</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Deviation</td>
<td>Mean</td>
<td>Lower</td>
<td>Upper</td>
</tr>
<tr>
<td>Pair 1 Pronoun reference</td>
<td>1.097</td>
<td>1.012</td>
<td>.182</td>
<td>1.468</td>
<td>.726</td>
</tr>
<tr>
<td>Pronoun reference</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 2 Summarizing</td>
<td>3.355</td>
<td>1.496</td>
<td>.269</td>
<td>3.903</td>
<td>2.806</td>
</tr>
<tr>
<td>Summarizing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 3 Scanning</td>
<td>5.613</td>
<td>3.853</td>
<td>.692</td>
<td>7.026</td>
<td>4.200</td>
</tr>
<tr>
<td>Scanning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 4 Skimming</td>
<td>3.355</td>
<td>2.443</td>
<td>.439</td>
<td>4.251</td>
<td>2.459</td>
</tr>
<tr>
<td>Skimming</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 5 Background knowledge</td>
<td>2.484</td>
<td>2.308</td>
<td>.414</td>
<td>3.330</td>
<td>1.637</td>
</tr>
<tr>
<td>Background knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pair 6 Identifying word meaning</td>
<td>2.452</td>
<td>2.173</td>
<td>.390</td>
<td>3.249</td>
<td>1.654</td>
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<tr>
<td>Identifying word meaning</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(df) = 2(31) - 2 = 60

1. Pronoun References

Table (1) illustrates that that the Mean of the experimental group was 2.35 and the Mean of the control group was 1.45. The standard deviation of the experimental group was 0.915 and the control was 0.675. The t value was 4.424. The effect size was 0.245964. The Statistical Significance was 0.01.

Table (2) shows that that the Mean of the experimental group in the pretreatment was 1.26 and the Mean of the same group in the post treatment reached 2.35. The standard deviation of the experimental group in the pretreatment was 0.773 and in the post treatment was 0.915. The standard error mean was 0.139 then it became 0.164.

Table (3) indicates that that the Mean of the paired differences in the pronoun reference skill was 1.097. The standard deviation was 1.012. The standard error mean was 0.182. 95% Confidence Interval of the Difference at the lower level was 1.468 while at the upper level it
was .726. t value was 6.036. sig .(2tailed) value was at 0.01. The effect size was 0.548419.

2. Summarizing

Table (1) illustrates that the Mean of the experimental group was 4.71 and the Mean of the control group was 1.16. The standard deviation of the experimental group was 2.101 and the control was 1.003. t value was 8.487. The effect size was 0.545555. The Statistical Significance was 0.01.

In Table (2), the Mean of the experimental group in the pretreatment was 1.35 and the Mean of the same group in the post test reached 4.71. The standard deviation of the experimental group in the pretest was 1.582 and in the post test was 2.101. The standard error mean was .284 then it became .377.

Table (3) shows that the Mean of the paired differences in the summarizing skill was 3.355. The standard error mean was .269. The standard deviation was 1.496. The 95% Confidence Interval of the Difference at the lower level was 3.903 while at the upper level it was 2.806. t value was 12.490. sig .(2tailed) value was at 0.01. The effect size was 0.83871.

3. Scanning

Table (1) illustrates that the Mean of the experimental group was 16.35 and the Mean of the control group was 9.68. The standard deviation of the experimental group was 4.827 and the control was 4.003. t value was 5.928. The effect size was 0.369358.

Table (2) shows that the Mean of the experimental group in the pre-test was 4.58 while the Mean of the same group in the post test reached 16.35. The standard deviation of the experimental group in the pretest was 4.297 and in the post test was 4.827. The standard error mean increased from .772 to .867.

Table (3) shows that the Mean of the paired differences in the scanning skill was 5.613. The standard deviation was 3.853. The standard error mean was .692. The 95% Confidence Interval of the Difference at the lower level was 7.026 while at the upper level it was 4.200. t value was 8.111. sig .(2tailed) value was at 0.01.
4. Skimming

Table (1) shows that the Mean of the experimental group was 8.06 and the Mean of the control group was 5.03. The standard deviation of the experimental group was 3.558 and the control was 2.677. t value was 3.791 and the effect size was 0.193241.

Table (2) illustrated that the Mean of the experimental group in the pre-test was 4.71 while the Mean of the posttest was 8.06. The standard deviation of the experimental group in the pretest was 2.854 then in the post test was 3.558. The standard error mean increased from .513 to .639.

Concerning Table (3), the Mean of the paired differences in the skimming skill was 3.355. The standard deviation was 2.443. The standard error mean was .439. The 95% Confidence Interval of the Difference at the lower level was 4.251 and at the upper level it was 2.459. t value was 7.645. sig .(2tailed) value was at 0.01. The effect size was 0.66081.

5. Background Knowledge

Based on table (1), the Mean of the experimental group was 7.06 and the Mean of the control group was 3.90. The standard deviation of the experimental group was 2.943 and the control was 2.343. t value was 4.679. The effect size was 0.267337. The Statistical Significance was 0.01.

In Table (2), the Mean of the experimental group in the pre-treatment was 4.71. The Mean of the post-treatment increased to 7.06. The standard deviation of the experimental group in the pretest was 2.500 then it rose in the posttest and was 2.943. The standard error mean of the pretest was .529 and in the posttest .529.

Table (3) shows that the Mean of the paired differences in the background knowledge skill was 2.484. The standard deviation was 2.308. The standard error mean was .414. The 95% Confidence Interval of the Difference at the lower level was 3.330 while at the upper level it was 1.637. t value was 5.993. sig .(2tailed) value was at 0.01. The effect size was 0.544876.

6. Identifying Word Meaning

Table (1) shows that the Mean of the experimental group was 5.48 and the Mean of the control group was 3.10. The standard deviation
of the experimental group was 2.308 and the control was 2.119. The effect size was 0.230716. The Statistical Significance was 0.01.

Table (2) shows that the Mean of the experimental group in the pre-treatment was 3.03. The Mean of the post-treatment increased to 5.48. The standard deviation of the experimental group in the pretest was 2.415 then it was 2.308 the post test. The standard error mean of the pretest was .434 and in the posttest .414.

According to Table (3), the Mean of the paired differences in the identifying word meaning skill was 2.452. The standard deviation was 2.173. The standard error mean was .390. The 95% Confidence Interval of the Difference at the lower level was 3.249 while at the upper level it was 1.654. t value was 6.281. sig .(2tailed) value was at 0.01. The effect size was 0.568041.

**Answer of the Second Hypnosis**

The researcher hypothesized the following hypothesis:

*There is a statistically significant difference at the level of (0.01) between the mean scores of the experimental group and the control group in pre and post measurement of the reading comprehension skills as a whole in favor of the experimental group.*

**Table (4)**

The differences between mean scores of the experimental group and the control group in the reading comprehension skills as a whole in the on-line post test.

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>T</th>
<th>Sig.</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exper</td>
<td>31</td>
<td>44.0323</td>
<td>14.05106</td>
<td>6.521</td>
<td>0.01</td>
<td>0.414768</td>
</tr>
<tr>
<td>Contr</td>
<td>31</td>
<td>24.3226</td>
<td>9.26062</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Table (5)**

The mean scores of the experimental group for reading comprehension skills as a whole in the on-line pre-post test.

<table>
<thead>
<tr>
<th>Pair 1</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading_Pre</td>
<td>25.6774</td>
<td>31</td>
<td>10.32275</td>
<td>1.85402</td>
</tr>
<tr>
<td>Reading_Post</td>
<td>44.0323</td>
<td>31</td>
<td>14.05106</td>
<td>2.52364</td>
</tr>
</tbody>
</table>

\[(df) = 2(31)-2=60\]
Table (6)
Paired Samples Test of the reading comprehension skills as a whole in the on-line pre-post test.

\[(df) = 2(31)-2=60\]

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>95% Confidence Interval of the Difference</th>
<th>Sig. (2tailed)</th>
<th>Effect size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paired 1 Reading _Pre</td>
<td>18.35 484 8.34086 1.4980 6 21.41429 15.29539 12.25 2 0.01</td>
<td>0.833437</td>
<td></td>
</tr>
<tr>
<td>Reading _Post</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

According to table (4), the Mean of the experimental group was 44.0323 while it was 24.3226 in the control group. The standard deviation of the experimental group was 14.05106 and the control was 9.26062. t value was 6.521. The effect size was 0.414768. The level of significance was at 0.01.

In Table (5), the Mean of the experimental group in the pretreatment was 25.6774 and the Mean in the post treatment was 44.0323. The standard deviation of the experimental group in the pretreatment was 10.32275 and in the post treatment was 14.05106. The standard error mean was 1.85402, and then it became 2.52364.

Table (6) shows that the Mean of the paired differences was 18.35484. The standard deviation of the paired differences was 8.34086. The standard error mean of the paired differences was 1.49806. 95% Confidence Interval of the Difference at the lower level was 21.41429, meanwhile at the upper level was 15.29539. t value was 12.252. The effect size was 0.833437. sig (2tailed) value was at 0.01.

**Recommendations**
1. Giving more attention to create an interactive learning atmosphere that enables students to communicate with native speakers.
2. Providing more activities especially while the pre-reading phase.
3. Using various teaching aids and new strategies in teaching.

**Pedagogical Implications**

1. Pupils’ levels of reading comprehension skills should be identified as this step can be beneficial while teaching English language.
2. Pupils’ interests should be taken into account by selecting the topics with suitable and interesting content.
3. Connectivism theory has great influence on pupils’ performance.
References


De La Cruz, M. & Lopez, M. (2016). The Exploration of the Informatin and Communication Technologies in the Development of Reading Comprehension Skill of English Language with the Students at Primer Year of High School “A” at Educational Unit Combatants of Tapi, City of Riobamba, Chimborazo Province, during the Academic Term February-July 2016. (Bachelor thesis, National University of Chimborazo).


