The Effect of Spelling Multimedia on Learning and Retention Process of Second Grade Primary School Students

1Azar Akhondi, 2Mohammad H Yarmohammadian

1PhD Student, Department of educational sciences, Khorasgan (Isfahan) Branch, Islamic Azad University, Iran
2Professor, Education, Khorasgan (Isfahan) Branch, Islamic Azad University, Iran

ARTICLE INFO

Article history:
Received 25 March 2014
Received in revised form 20 April 2014
Accepted 15 May 2014
Available online 10 June 2014

Key words:
Spelling Multimedia, Learning, Retention, E-Curriculum.

ABSTRACT

The present study aimed to investigate the influence of spelling multimedia on learning and retention process of second grade female students of primary schools. The study was carried out in control and study groups and the samples were given pre- and post-tests. Primary school students of Kermanshah in the academic year of 2013 served as the statistical universe of this study. The sample, including 40 individuals, was selected according to simple random sampling method and grouped into control and study groups. While the study group received instruction via spelling multimedia in 12 sessions (45 minutes each), the control group were traditionally instructed by teacher in the same period. To collect data, a researcher-constructed test for spelling, was utilized. This very test revealed 83% reliability, estimated via test-retest method. The content validity of the test was then confirmed by teachers. Students’ grades in the two groups were then analyzed and contrasted via independent and dependent T-test. The pre- and post-tests grades of female students, examined through dependent T-test, revealed the significant level of %000 which is lower than %05. This very finding demonstrates that the multimedia was of influence on the learning process of female students and thus the researcher’s first hypothesis proved to be true. Two weeks later, the students in control and study groups were once more given a post-test. Students’ grades were then analyzed using independent T-test. Given that the estimated independent T-test, 4/125, was greater than the T-table, 1/725, the second hypothesis, concerning the influence of multimedia upon female students’ retention, proved to be true.

© 2014 AENSI Publisher All rights reserved.


INTRODUCTION

Advances in information technology have brought dramatic changes to the means and methods of learning. Recent researches disclosed the positive effect of educational multimedia and software on students’ academic achievements. As the technology keep flourishing, educational system is required to both revise the curriculum to equip students with computer literacy and to enrich and renew learning environment to pave the way for the learners’ reliance on learning sources. Accordingly, the need is increasingly recognized to modify traditional teaching methods and replace them with modern approaches. Researches demonstrated that the multimedia-based instruction exercises a positive influence on students’ comprehension and retention [6]. It is also showed that visual-based curriculum greatly affects students’ learning and retention [7]. Indeed, multimedia simultaneously involves and engages all of students’ senses and thus proves to be of great influence on their learning process [8]. [13], revealed that educational networks are of utmost importance in language skills acquisition and holds that the use of computers for language acquisition alters students’ outlook toward writing skill and spelling. [16] Similarly highlights the effect of computer use on the improvement of language skills, particularly spelling and correct pronunciation. Given the fact that Persian is our formal language, the instruction of language skills is vital in all levels of education, especially in primary levels [17]. Writing enjoys prime importance among language skills. Thus, correct spelling carries weight as long as it matters to sustain Persian language [5]. Denoting the act of correctly writing down mother’s utterances, spelling appears as the foundation for learning other courses. Yet, the prevalent methods fail to remove the students’ educational problems with this very skill. Unfortunately, spelling is still assumed to be an assessment instrument rather than an educational one in Iran’s educational curriculum. It mostly serves teachers to assess students’ mastery and knowledge of words. In this very system, students are merely suggested to rewrite the correct spelling of the misspelled words.

Corresponding Author: Azar Akhondi, PhD Student, Department of educational sciences, Khorasgan (Isfahan) Branch, Islamic Azad University.
Literature review:

Arqavani [4] grouped 85 students into control and study groups. As the former were normally instructed by a teacher, the latter were trained via software in six sessions. The findings, drawn from the comparison of students’ pre- and post-tests, brought the researcher to the conclusion that educational software positively influences the retention process of primary schools’ students. Noruzi [11] conducted a research to investigate the effect of Math multimedia on fifth grade primary school students. He also utilized control and study group and declared that Math multimedia improved students’ learning. Examining the impact of multimedia on students’ handwriting, Qamin [12] reported a dramatic change in this very skill. Similarly, Asgari [2] and Mehr Mohammadi (2011) reported in separate studies that student’s learning and academic performance would demonstrate a significance advance when software and multimedia are used. Finally, Mahdizadeh [10] recounted that Science multimedia was of considerable influence on students’ learning.

The Purpose of Study:

Investigating the effect of spelling multimedia on learning and retention process of second grade female students of primary schools.

Hypotheses:

1. Instruction via spelling Multimedia positively affects the learning process of second grade female students of primary schools.
2. Instruction via spelling Multimedia positively affects the retention process of second grade female students of primary schools.

Methodology:

2-1- Statistical universe, Samples, Sampling method:

The study was carried out in control and study groups. Female students of primary schools of Kermanshah in the academic year of 92-93 served as the statistical universe of this study. Using random sampling method, 20 students were positioned into control group. Another 20 students formed the study group. Given that only a few schools enjoy computer sites, Anahita Girl School, from educational district one was selected.

2-2- Instrument:

Researcher-Constructed Spelling Test Spelling test contains a passage of 100 terms. It enjoys 83% reliability, estimated via test-retest method in a month and its content validity was confirmed by five teachers.

Researcher-Constructed Spelling Multimedia:

Curriculum designed for spelling is presented in a multimedia. This spelling curriculum contains various drills extracted from six chapters of second grade student book, transformed into Auto run file via different types of software like Macromedia Flash Player, PowerPoint, Auto play Media, and Aveda software. The multimedia was then written on CD so that it could be readily played in personal computers. It should be mentioned that an educational technologist and a number of primary school teachers confirmed the product’s content validity and technical features.

2-3- Variables:

Researcher-constructed spelling multimedia served as the independent variable. Female students’ extent of learning and retention functioned as the dependent variable. Students’ mental and physical health, gender, grade, and age are the control variables of the study.

2-4- Implementation:

In the first step, the control and study group were given a researcher-constructed spelling pre-test. The study group was subsequently instructed via researcher-constructed spelling multimedia in 12 sessions (45 minutes each). The control group was simultaneously trained by a teacher in 12 sessions. To assess the impact of multimedia on students’ learning and retention, the control and study group were given a post-test after two weeks.

3- Statistical Data Analysis:

Independent and dependent T-Test were employed to analyze data.

The estimated T equals 3.394, whereas the T-table is 1.725. As the result 1.725 <3.394 indicates there is a significance difference between the control and the study groups scores. It reveals the effect of multimedia software on female students’ learning. Thus, the first hypothesis of the research proved to be true.
Table 1: Independent Sample T-Test of Control and Study Groups.

<table>
<thead>
<tr>
<th>T-test for Equality of Means Test</th>
<th>t</th>
<th>Freedom Degree</th>
<th>Sig. Significance</th>
<th>Mean Difference</th>
<th>Standard Error of Mean Difference</th>
<th>%95 Confidence Interval for Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low Extreme</td>
</tr>
<tr>
<td>Post-test scores of control and study groups of female students</td>
<td>Equal Variance Assumption</td>
<td>3.394</td>
<td>38</td>
<td>.002</td>
<td>1.86250</td>
<td>.54877</td>
</tr>
<tr>
<td></td>
<td>Unequal Variance Assumption</td>
<td>3.394</td>
<td>24.379</td>
<td>.002</td>
<td>1.86250</td>
<td>.54877</td>
</tr>
</tbody>
</table>

Table 2: Retention T-Test of Control and Study Groups.

<table>
<thead>
<tr>
<th>T-test for Equality of Means Test</th>
<th>t</th>
<th>Freedom Degree</th>
<th>Significance Level</th>
<th>Mean Difference</th>
<th>Standard Error of Mean Difference</th>
<th>%95 Confidence Interval for Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Low Extreme</td>
</tr>
<tr>
<td>Retention</td>
<td>Equal Variance Assumption</td>
<td>4.124</td>
<td>38</td>
<td>.000</td>
<td>1.45000</td>
<td>.35159</td>
</tr>
<tr>
<td></td>
<td>Unequal Variance Assumption</td>
<td>4.124</td>
<td>26.731</td>
<td>.000</td>
<td>1.45000</td>
<td>.35159</td>
</tr>
</tbody>
</table>

The estimated T equals 4.124, whereas the T-table is 1.725. As the result, T= 4.124>1.725, indicates multimedia was of influence on female students’ retention scores. Thus, the second hypothesis of the research proved to be true.

**Discussion:**

The findings of this study demonstrated that spelling multimedia positively influences the learning and retention process of second grade female students of primary schools. Thus, the two hypotheses of this study proved to be true.

**REFERENCES**