Statistical Evaluation of Electronically Supported Learning and Teaching System for Listening Improvement

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Abstract. In the last decade, the era of internet, e-learning continued to grow at the tremendous rate, which brought drastic changes in education practice. The paper aimed at investigating the effect of e-learning based study on listening improvement. In this study, two parallel classes of 120 non-English majors were arranged into an experimental and a control group, participating in the same listening course at the first semester. From the second semester, the experimental group accepted the training systematically on e-learning. Results of this study indicated e-learning produced significant effects in areas investigated i.e. the experimental group outperformed the control group on listening achievements.

Introduction

The development of e-learning supplies new opportunities for learning and education. With the rapid growth of technology and population, it seems inevitable that e-learning is going to be main agent for education, which many universities put it in their programs. The e-learning system offers a flexible learner-centered education atmosphere due to the World Wide Web. As a new education, e-learning encourages students to think critically what to learn and how to learn [1].

More and more English language learner programs throughout China use a variety of instructional methodologies to increase English proficiency and English academic competency [2]. An increasingly used modality in English language learner classrooms is computer technology. This type of instruction and learning is commonly referred to as e-learning. To learn a language like English via e-learning, students should be self-directed and use new strategies because students are exposed to a conceptualized environment to strengthen their elemental skills such as: listening, speaking, reading and writing [3]. Especially, listening comprehension competence is one of the main skills for students to grasp. Nowadays, the role of listening course is changed and listening teaching begins to gain high priority English learning and teaching. Meanwhile, due to its characteristics, e-learning has been developed into a superior alternative to traditional learning.

The aim of the paper is to show the effects of e-learning on English learning, especially in listening skill in English.

Theoretical Framework

E-learning’s Definition

E-learning system is an internet based service like the application system or the internet based virtual course study service. This system is able to be interpreted in various way such as “computer based, education delivery system which is provided through the Internet”, or “an educational method that is able to provide opportunities for the needed people, at the right place, with the right contents, and the right time” [3].
E-learning’s Components

Internet and multimedia

According to Wikipedia developments in Internet and multimedia technologies are the basic enable of e-learning, with content, technologies and services being identified as the three key sectors of the e-learning industry [4].

Language learning programs like English based on Internet and multimedia supply multifunctional patterns with sounds, videos, graphics and texts in order to let learners to dance in the atmosphere of target language and culture. Meanwhile the combination of internet and teaching styles from tutors contributes to create a meaningful learning environment. Emails and chat rooms play a significant part for communication between learners and tutors, which is helpful to strengthen the writing skills of learners in English learning. Besides, there are several specific advantages from internet and multimedia supplied. 1). It is possible for learners to arrange their favorite learning process and select their own methods, learning materials, etc. 2). Learners have abundant choices about listening texts due to internet. 3). Instructional materials from multimedia require learners to see, hear and practice at the same time, which helps they remember more as they learn and become more fluent as they practice [5].

Learner

Learner is one of the key elements in e-learning which should be known clearly and completely. In e-learning system, the teaching–learning method is assumed to be self-directed learning, which is supported by educational philosophy of constructivism [3].

Contrary to the traditional education approach, learners take the lead in self-regulatory learning for a total learning process. That means, learners play the same roles which teachers do by organizing or re-organizing knowledge like the consumer, by selecting knowledge and using it practically [3].

In e-learning system, students might meet several difficulties and barriers that may extinguish their enthusiasm for learning [6]. So it issues challenge to manage learners’ abilities to organize self-learning time, process information, plan data, and control data.

Teachers

In e-learning, the information management systems, someone argues that the importance of teacher decrease as the technology grows. Actually, as one of the elementary factors, teachers play more and more important role in the e-learning environment taking system run more smoothly. Contrasted with their responsibilities in the traditional education, teachers not only establish a relationship with students but also extend this relationship through a learning platform offering the additional sessions. Rather than a direct supplier of knowledge, teachers should also be instructor in the learning process, research strategy for information [7]. In e-learning system, teachers may meet the challenge, i.e., “How to put any course online in an effective way to engage students in learning?”

Research Design

The paper investigates how E-education affects the listening comprehension performance in English and how the students think about E-education. Thus, two research questions are formulated:

a) Is the effect different between E-education and the traditional approach in the field of English listening learning?

b) Who achieved the better performance in the experimental group after the training program?

Sample

The participants in this study were four classes, 120 freshmen non-English majors in Tianjin Agricultural University. The four classes were divided into two groups including the control and experimental groups. Both of the control and experimental groups took part in the regular first-semester English listening course. Following the same syllabus, they took the course once a
week in 100-minute course and used the same course materials. In order to ensure the subjects of control and experimental groups came from the same overall sample, we analyzed the listening scores from the end of first term (Table 1). Table 1 shows the average scores and standard deviations in two groups are close. T-test was used to show the scores from two groups have no difference (p>0.05), i.e., the listening levels of two groups are the same.

Table 1. The listening ability comparison between the control group and experimental group.

<table>
<thead>
<tr>
<th>Pre-training</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T</th>
<th>P</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Control</td>
<td>60</td>
<td>10.58</td>
<td>2.37</td>
<td>0.316</td>
<td>0.752</td>
<td>118</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>60</td>
<td>10.43</td>
<td>2.80</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In order to determine the lower score and the higher score students’ listening performance, the lower quartile and higher quartile in two groups were analyzed. Table 2 shows that the lower and the higher scores from two groups have no difference (P>0.05), i.e., the listening levels of two groups are the same.

Table 2. The listening ability comparison between the lower score and higher score.

<table>
<thead>
<tr>
<th>Pre-training</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T</th>
<th>P</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower quartile</td>
<td>Control</td>
<td>15</td>
<td>7.20</td>
<td>1.01</td>
<td>0.435</td>
<td>0.667</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>15</td>
<td>7.00</td>
<td>1.46</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher quartile</td>
<td>Control</td>
<td>15</td>
<td>13.27</td>
<td>0.88</td>
<td>-0.809</td>
<td>0.425</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>15</td>
<td>13.73</td>
<td>2.05</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Treatment

From the second-semester on, the experimental group was arranged to fulfill the English listening course based on the campus intranet. Students, in experimental group, were required to learn the 100-minute online course about English listening once a week via computers. Students entered the system of autonomic learning to accomplish the listening and speaking course, which students and teachers can communicate through the screen. In addition to home works, students also have access to the system including news training materials, academic lectures, movies, which were updated continually on line, to practice their English listening ability. And it didn’t have strict demand of location for those who wanted to spend much time on listening improvement. Meanwhile, teachers, as the supervisors, were given the priority to keeping an eye on the state of autonomic learning. After finishing one unit, students should be set a unit test. If his or her exam result was not get 75%, he or she would be forced to learn the unit again under the system. System records would memorize automatically the detail student information, such as total study time and study session. Teachers would not only estimate the students’ conditions, but also provide the corresponding assistance through the screen. By the end of term, both the control group and the experimental group participated in the same test about English listening.

Data Collection and Analysis

After the students had experienced the listening courses for two semesters, both the control and experimental group participated in same test to measure their listening performance. Besides that, the experimental group was given the questionnaires to probe the students attitude how E-education improve the listening performance. The data thus obtained were analyzed by means of SPSS. The analysis procedures involved are as follows:
a) To determine the students’ improvement in listening performance, the scores after training were compared between the experimental and the control group. Table 3 shows there is a significant difference in the after training score (p=0.043<0.05), which indicating that the training for the students has caused some change. Compared with the average score in the control group, the average score in the experimental group is higher, indicating the experimental group made a significant progress. Thus, a conclusion may be draw here that E-education is helpful for improving English listening proficiency.

Table 3. The listening ability comparison between the control group and experimental group after training.

<table>
<thead>
<tr>
<th>Post-training</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T</th>
<th>P</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>60</td>
<td>10.37</td>
<td>2.54</td>
<td>-2.056</td>
<td>0.043</td>
<td>118</td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>60</td>
<td>11.30</td>
<td>2.45</td>
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</tr>
</tbody>
</table>

b) To determine the differential effects of E-education on learner of different listening ability levels, the study chooses two ability groups, the lower quartile score students and the higher quartile score students, based on the score they got in the first term. Table 4 reveals different statistical significance in the gain scores of the subjects between the lower quartile score students (p=0.002), the higher quartile score students (p=0.065), which reveals the lower quartile score students made more progress than the higher quartile score students.

Table 4. The listening ability comparison on different listening ability levels.

<table>
<thead>
<tr>
<th>Post-training</th>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T</th>
<th>P</th>
<th>Df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower quartile</td>
<td>Control</td>
<td>15</td>
<td>7.27</td>
<td>1.10</td>
<td>-3.46</td>
<td>0.002</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>15</td>
<td>8.40</td>
<td>0.63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Higher quartile</td>
<td>Control</td>
<td>15</td>
<td>13.60</td>
<td>1.84</td>
<td>-1.91</td>
<td>0.065</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Experimental</td>
<td>15</td>
<td>14.67</td>
<td>1.11</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusions

From the collected data and subsequent analysis, it appeared that E-education had a significant effect on improvement of listening performance in this paper. Compared with the control class, the experimental class achieved significant improvement in listening performance. Since E-education, as a learner-center pattern, encouraged students to see, hear, and practice simultaneously on the basis of their own pace; the process of listening training to students became yield twice the result with half the effort. Especially, the lower quartile score students, without the fear of ridicule from other students, might feel comfortable to one-on-one instruction supplied by E-education, which was not existing in today’ s classrooms. It helped teachers evaluate learner’s suitable level to place appropriate courses.

References


