

USING TECHNOLOGY FOR DEVELOPING ESL STUDENTS' READING COMPREHENSION AND MOTIVATION

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Abstract

International ESL students seek to master the new language due to a desire to interact with a new culture and to achieve academic success. Reading is the most important learning area in ESL classes. However, ESL students at Saginaw Valley State University are facing many difficulties in English reading classes. Therefore, the current study attempted to apply some free Internet-based applications to enhance ESL students' reading comprehension and motivation. For this to be done, seventeen ESL college students at Saginaw Valley State University were divided into two groups; an experimental group, which included (9) participants, and a control group, which included (8) participants. Both groups were asked to answer some demographic questions and to respond to the study instruments. For collecting the required data, the researcher adapted the Reading Test of the ELP (RTELP) and a Motivation Reading Questionnaire (MRQ). The results revealed that the participants' mean scores of the experimental group on the Post-MRQ and the mean scores of the control group on the same test seems insignificant where the mean score of the two groups is almost similar. Likewise, the participants' mean scores of the experimental group on the Post-RTELP and the mean scores of the control group on the same test seems insignificant where the mean score of the two groups is almost similar. Such results may be due to the fact that most of the participants were Saudi and are likely to think collectively or may have similar preconceptions on some educational issues. Finally, it is recommended that using new software to help students build language skills is a must. More research is recommended to investigate the impact of using technology with other skills such as listening, speaking, and writing.

International students often seek to master the new language due to a desire to interact with a new culture and community and to achieve academic success. Reading is the most important action in an ESL class because it is the bridge to understanding individual sentences and recognizing most of the words in the text. Thus, ESL instructors often ask how to make reading class more collaborative, communicative, and fun (Lück, 2008). In fact, students who were good in reading class have better academic achievement in the rest of their education (Nelson, 2005). In order to keep ESL students engaged and interested, experts of ESL agree that computer-assisted language learning can increase gaining of foreign language skills (Mohammed, 2009). In addition, technology and new teaching strategies have been found to cause greater student satisfaction (Hamilton, 2010).

Mohamad (2009), investigated whether the learning websites with interactive content can offer certain advantages over conventional teaching methods. The study was implemented on 50 college students in Malaysia to compare two grammar-teaching methods: Internet-Based Grammar Instruction (IBGI) and Conventional Pen and Board Instruction (CPBI). The results showed that the students who went through IBGI performed better than those who received CPBI in the learning of certain grammatical items. The findings also indicated that students who experienced IBGI have fewer mistakes in their essays than those counterparts who experienced CPBI. The findings are in favor of the usefulness of the Internet as a tool in the teaching of grammar (Mohamad, 2009).

Technology has been shown to be helpful and desired by teachers in teaching reading. Md Yunus (2007) investigated the present use of information and communication technologies (ICT) among ESL technical school teachers in teaching and factors that affect the use of ICT and perceptions of their skills in ICT. The model that was adopted, Davis' Technology Acceptance Model (TAM), provided a basis for determining ICT attitudes and factors affecting the usage of ICT in teaching. The sample of the current study consisted of 170 ESL teachers. Data was collected via a questionnaire survey of ESL technical school teachers in Malaysia and was followed by interviews. The present study found that ESL teachers in Malaysia are anxious to use the potential of ICT to enhance the learning and teaching process. The findings showed the development of teachers' positive attitudes toward computers (Md Yunus, (2007).

Technology has also been shown to assist in teaching writing. Foulger and Silva (2007) of the Arizona State University trained fourteen elementary and middle school teachers to use technology in classrooms to enhance the writing development of English language skills. The fourteen teachers were volunteers from urban school districts in the United States. The teachers used technology to support class activities for English Language Learners (ELL). The study analyzed the impressions from the teachers and the developer who trained the teachers. As a result, the conclusion showed that integrating technology could strengthen the framework used. In addition, results recommended that specific student uses of common technology would be more effective to ELL writing skills (Foulger and Silva, 2007).

Yunus, Salehi, & Chenzi (2012) found that technology assisted in teaching writing. This study examined the effectiveness of using Malaysian ESL university students' technology tools in ESL writing classrooms, integrating online activities with student tasks. The material was collected from online board conversations. The research instrument in this study was survey questions, which contained open-ended writing. The students were to give responses about the advantages and disadvantages of using technology tools in learning ESL writing. The students were free to plan tasks by engaging technology in the classroom. The findings showed that connecting with social networking during writing classes could assist students in mastering the knowledge and increasing their ESL writing skills (Yunus, Salehi, & Chenzi, 2012).

For both reading and writing, Nomass (2013) found that technology has become necessary, ESL teachers should motivate students to use technology, and institutions should modernize their way of instruction. The research suggested these of contemporary technology in English as a second language classes. Moreover, the paper investigated different techniques and approaches, which can assist students in improving their learning skills. In addition, use of various technology tools will be useful for ESL classes like online English language learning websites, presentation software, electronic dictionaries, computer language learning programs, listening CD-players, chatting and email messaging programs, and learning video-clips. A case study has been done and a questionnaire was used to collect the data. The paper diagnosed the limitations and drawbacks of the English language learning tools (Nomass, 2013).

Technology sources can be interactive and attractive to students while increasing the effectiveness of teaching. Bahrani (2011) investigated the effectiveness of audio/visual mass media and social interaction as sources of language input in ESL contexts on speaking. The study administered a sample speaking test to 100 ESL students in Iran and another 100 in Malaysia. Then, forty participants from each group were selected. Through the experiment, ESL participants experienced an audio/visual mass media presentation while the other participants experienced a social interaction. Both groups took post-speaking tests. The findings showed that both ESL groups performed better and that technology promotes speaking fluency (Bahrani, 2011).

Due to the increased effectiveness of teaching using technology, research has concluded that teachers need to develop strategies and improve skills in using technology in the classroom. Son (2008) examined the usefulness of using Web-based language learning activities as a supplementary resource for teaching English as a second language. A group of ESL students in an Australian university tested the website. The researchers designed the website, which contained three types of online English activities: 1) grammar, vocabulary, reading, and listening activities; 2) task-based activities that require students to use the Web; and 3) teacher activities. The ESL students leaned toward using the web, showed confidence, and tended to use more web activities in and outside the class. The researchers suggested that teachers have to increase their skills to know how to deal with the online tools. Moreover, the ESL website should be used constantly in the classroom (Son, 2008).

Yu, Sun, and Chang (2010) also concluded that new teaching strategies needed to be formed. This research focused on 241 students (159 males and 82 females) and teacher's attitudes toward and experiences with the use of course management systems (CMS) in college language courses. The students were selected from six English courses in two universities in Taiwan. The researchers examined the study's problem in three methods: blackboard (traditional learning), Moodle, and E-campus 3 (E3). The study used questionnaires and interviews. The findings of this study highlight the crucial need to assist teachers in developing strategies for the use of CMS to support teaching in the English major. In addition, the findings showed the importance of developing CMS content with functions toward pedagogical needs (Yu, Sun, and Chang, 2010).

Li (2012) found that teachers are playing a more important role in the relation between classroom teaching and autonomous learning-homework-design. The study examined 30 English major freshmen from a Chinese university. This study examined the learners' perceptions of the Computer Applied Learning Environment (CALE) and the impact that CALE exerted on learners' motivation, autonomy, learning strategies, and interactive learning. The factors that enhance learner's motivation were autonomy, learning interactive strategies and cooperative learning in the CALE. The study proposed some possible teaching methods and revealed some significance for effective application of technology (Li, 2012).

Technology and new teaching strategies have been found to cause greater student satisfaction. Hamilton (2010) investigated whether e-learning and online materials are enhancing the interest and motivation for ESL or English as a foreign language (EFL) students. In the study, about 80 students were involved in a seminar house in suburban Japan for a week. The students divided into two groups; morning and afternoon classes. The program created an education environment that contained appropriate elements for communicative proficiency. The methodology in the present paper was developed through trial and error while teaching. Moreover, all of the activities that were used in this program were designed to engage students working as a group and practicing learning language. At the end, the findings showed that the students were satisfied and the seminar was highly effective. There was also an increase in productive ESL/EFL English (Hamilton, 2010).

Usó-Juan and Ruiz-Madrid (2009) examined the effectiveness of e-reading in EFL student skills, and in addition, completed a comparative study using strategies in hard copy and online reading. The participants were composed of three groups from different universities. The first group contained 154 first and second year Spanish-speaking students, who met with each other twice a week for 120 minutes each session throughout the semester. The second group contained 154 lower level English students. The third group contained 50 students divided in two teams; half of the students read printed PDF text and the other half read in online form. The study instruments were an academic reading test, which extended for a 4-hour session with a 15-minute break. The researchers also used a reading strategy questionnaire to develop student reading skills. The results showed that printed reading did not affect the students' attitudes negatively. On the other hand, the online reading was a helpful means to develop student reading and understanding skills. This shows that using traditional methods along with technology is important for the best outcome (Usó-Juan & Ruiz-Madrid, 2009).

Using technology in teaching causes greater communication and teamwork among students. Martin (2003), a reading specialist at Grace Park Elementary School who serves as a technical support teacher, trained the teaching staff in the use of software and motivated students to use technology equipment in reading class. Martin focused on the benefits of using computers to enhance reading skills. The researcher used the third grade class, which was composed of 18 students. As a reading specialist, the researcher investigated some technology means to motivate students before, during, and after the reading class. The researcher used observation as the research instrument, observing the students' interactive use of a suitable reading website. The findings showed that students loved and did well with the website reading, communicated with each other, and that the laptops motivated students to work cooperatively. These studies have proved the advantages of teaching with technology along with textbooks and other traditional approaches (Martin, 2003).

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Problem Rationale

The problem with an international reading class is that ESL students come from different cultures in which English is not the main language spoken. In addition, in some of these cultures reading is not appreciated or students are weak in reading skills, which means the student needs to redouble efforts with a second language (National Association for the Education of Young Children, November 1995).

Research Questions

1. To what extent does technology based reading improves EFL students' reading comprehension achievement?
2. To what extent does technology based reading enhances EFL students' reading motivation?

Definition of Key Terms

ESL: English as a second language or “the teaching of English to people who speak a different language and who live in a country where English is the main language spoken (*Esl*, 2013).

Level One: Students in level one of the English Language Program (ELP) at SVSU have just entered the university from a foreign country and have little knowledge of the English language.

Motivation: “The condition of being eager to act or work or a force or influence that causes someone to do something” (*Motivation*, 2013).

Technology: “A manner of accomplishing a task especially using technical processes, methods, or knowledge” (*Technology*, 2013).

Research Methodology

The goal of this study was to examine the ESL students’ performance development during experimental reading class and to show whether there is a correlation between student motivation and mastering the second language. Qualitative and quantitative methods were used in this study. The nature of this project was quantitative, but some illustrative qualitative methods were used, such as interviews. In fact, to learn more information about human issues, behaviors, and beliefs, the qualitative method will provide good insight (Mack, 2005). The quantitative method measures the human problem by using statistic and numbers. Students in this study were asked if the Internet use increases the students’ motivation to gain the second language and develop the students' desire toward reading in English. Thus, pre- and posttests and a survey were used to help the researcher to ascertain this information.

The survey instrument was designed to measure ESL students’ motivation toward learning the second language. The researcher’s goal for using technology as a tool, specifically www.spellingcity.com, is to effectively improve the ability of English language students to master reading skills and increase the level of motivation in reading classrooms, keeping the students engaged. The reason that the researcher chose to collect the data from an ESL institution was the researcher’s prior experience as an ESL student learning reading skills.

Setting

SVSU is a university that is located in the Great Lakes region, which is in Michigan between Saginaw and Bay City. SVSU currently has approximately 11,000 students with over 600 international students.

Participants

The participants in this study were 17 English language students during five weeks of one winter semester. The researcher selected level one in the ESL program because the students have are just beginning language studies and any progress made should be easy to see. A random sample was not used because of the prohibitive cost. Instead, convenience sampling was employed. Two ELP program classes were chosen to participate in the study. Students were assured that the information supplied in the questionnaire was confidential and was to be used for research purposes only. At the beginning of the study all participants were asked to fill out an information paper containing age, gender, and other demographic information.

Instruments

1) Motivation for Reading Questionnaire (MRQ)

The researcher used a questionnaire that was created by Wigfield and Guthrie in 1995 and revised in 1997 (Wigfield & Guthrie, 1997). The survey, Motivation for Reading Questionnaire (MRQ), was written with reference to the theory of reading motivation, which was proposed by both Wigfield and Guthrie. In the winter semester of 2014, the MRQ, a questionnaire, which consists of 30-Likert scale items, was administered in ELP at SVSU as an instrument for examining ELP students reading motivation.

2) Motivation for Reading Interview

The researcher arranged with the ELP to get a midterm reading test that was built by an experienced teacher to be used as a pretest and posttest for ESL Reading.

Results

Results related to the reading test of the English Language Program (RTELP)

The pre- and post tests that were given to assess prior and newly gained knowledge for each groups were Comprehensive Adult Student Assessment Systems (CASAS) assessments. CASAS assessments are used nationwide in settings that teach basic education, English, and life skills. The tests assess learner proficiency as well as any gains from test to test. This assessment is especially relevant for ESL students.

Table 1 <i>Participants' Mean Scores on the Pre-RTELP</i>			
<u>Group</u>	<u>N</u>	<u>Mean Score</u>	<u>SD</u>
Control	8	208.38	4.75
Experimental	9	203.89	4.70

Table 1 reveals that the difference between the participants' mean scores of the experimental group on the pre-RTELP (m= 203.89) and the mean scores of the control group on the same test (m= 208.38) seems insignificant where the mean score of the two groups seems to a great extent similar. To test the significance between the mean scores of the two groups, the Mann Whitney U Value should be calculated.

Table 2 <i>Significance of Participants' Mean Scores on the Pre-RTELP (MWU Value)</i>					
<u>Group</u>	<u>N</u>	<u>Mean Rank</u>	<u>Sum of Ranks</u>	<u>Mann Whitney U Value</u>	<u>P Value</u>
Control	8	11.25	90.00	18.00	0.08
Experimental	9	7.00	36.00		
Total	17				

Table 2 reveals that the difference between the participants' mean scores of the experimental group on the pre-RTELP and the mean scores of the control group on the same test seems insignificant where Mann Whitney P Value is (0.08) and this value is higher than 0.05. Statistically speaking, the difference between the scores of the two groups on the Pre-RTELP is insignificant.

Table 3 <i>Participants' Mean Scores on the Post-RTELP</i>			
<u>Group</u>	<u>N</u>	<u>Mean Score</u>	<u>SD</u>
Control	8	211.88	9.52
Experimental	9	208.56	3.74

Table 3 reveals that the difference between the participants' mean scores of the experimental group on the post-RTELP (m= 208.56) and the mean scores of the control group on the same test (m= 211.88) seems insignificant where the mean score of the two groups is almost similar. To test the significance between the mean scores of the two groups, Mann Whitney U Value should be calculated.

Table 4 <i>Significance of Participants' Mean Scores on the Post-RTELP (MWU Value)</i>					
<u>Group</u>	<u>N</u>	<u>Mean Rank</u>	<u>Sum of Ranks</u>	<u>Mann Whitney U Value</u>	<u>P Value</u>
Control	8	10.38	83.00	25.00	0.29
Experimental	9	7.78	70.00		
Total	17				

Table 4 reveals that the difference between the participants' mean scores of the experimental group on the Post-RTELP and the mean scores of the control group on the same test seems insignificant where Mann Whitney P Value is (0.29) and this value is higher than 0.05. Statistically speaking, the difference between the scores of the two groups on the Post-RTELP is insignificant.

Results related to Motivation Reading Questionnaire (MRQ)

Table 5 <i>Participants' Mean Scores on the Pre-MRQ</i>			
<u>Group</u>	<u>N</u>	<u>Mean Score</u>	<u>SD</u>
Control	7	60.00	7.96
Experimental	12	54.58	13.79

Table 5 reveals that the difference between the participants' mean scores of the experimental group on the Pre-MRQ (m= 54.58) and the mean scores of the control group on the same test (m= 60.00) seems insignificant where the mean score of the two groups is seemingly comparable. To test the significance between the mean scores of the two groups, Mann Whitney U Value is to be estimated.

Table 6 <i>Significance of Participants' Mean Scores on the Pre-MRQ (MWU Value)</i>					
<u>Group</u>	<u>N</u>	<u>Mean Rank</u>	<u>Sum of Ranks</u>	<u>Mann Whitney U Value</u>	<u>P Value</u>
Control	7	13.07	91.50	20.50	0.07
Experimental	12	8.21	98.50		
Total	19				

Table 6 reveals that the difference between the participants' mean scores of the experimental group on the Pre-MRQ and the mean scores of the control group on the same test seems insignificant where Mann Whitney P Value is (0.07) and this value is higher than 0.05. Statistically speaking, the difference between the mean scores of the two groups on the Pre-MRQ is insignificant.

Table 7 <i>Participants' Mean Scores on the Post-MRQ</i>			
<u>Group</u>	<u>N</u>	<u>Mean Score</u>	<u>SD</u>
Control	7	61.57	5.19
Experimental	12	55.42	13.67

Table 7 reveals that the difference between the participants' mean scores of the experimental group on the Post-MRQ (m= 55.42) and the mean scores of the control group on the same test (m= 61.57) seems insignificant where the mean score of the two groups is almost similar. To test the significance between the mean scores of the two groups, Mann Whitney U Value should be calculated.

Table 8 <i>Significance of Participants' Mean Scores on Post-MRQ (MWU Value)</i>					
<u>Group</u>	<u>N</u>	<u>Mean Rank</u>	<u>Sum of Ranks</u>	<u>Mann Whitney U Value</u>	<u>P Value</u>
Control	7	12.36	86.50	25.50	0.16
Experimental	12	8.63	103.5		
Total	19				

Table 8 reveals that the difference between the participants' mean scores of the experimental group on the Post-MRQ and the mean scores of the control group on the same test seems insignificant where Mann Whitney P Value is (0.16) and this value is higher than 0.05. Statistically speaking, the difference between the scores of the two groups on the Post-MRQ is insignificant.

Statistical conclusions

Firstly, according to the results mentioned in tables 4 and 5, it could be concluded that there was no significant difference between the mean scores of the two groups on the pre-RTELP where Mann Whitney P Value is (0.08) and this value is higher than 0.05. Similarly, according to the results mentioned in tables 6 and 7, it could be concluded that there was no significant difference between the mean scores of the two groups on the pre-RTELP where Mann Whitney P Value is (0.29) and this value is higher than 0.05. Such evidence might answer the first research question. That is to say, there was no significant difference between the academic performance of ESL students who were taught reading by using technology and those who were not.

Secondly, in the light of the results illustrated in tables 8 and 9, it could be concluded that there was no significant difference between the mean scores of the two groups on the Pre-MRQ where Mann Whitney P Value is (0.07) and this value is higher than 0.05. In the same way, in relation to the results mentioned in tables 10 and 11, it could be concluded that there was no significant difference between the mean scores of the two groups on the Post-MRQ where Mann Whitney P Value is (0.16) and this value is higher than 0.05. Such evidence might answer the second research question. That is to say, there was no significant difference between the reading motivation development of ESL students who were taught reading by using technology and those who were not. In short, the effect of using technology in teaching reading is almost similar on the ESL students of the two groups; the control and experimental.

Discussion and Recommendations:

The purpose of this study was to investigate if the presence of technology tools in the classroom affects the students' academic progress and increases motivation. Nomass (2013) found that technology has become necessary, ESL teachers should motivate students to use technology, and institutions should renovate their way of teaching. This study was based on quantitative methods such as the CASAS standardized test and a motivation questionnaire which was given to the students before and after the research period. The study also included qualitative methods through the use of student interviews.

Seventeen ESL college students were divided into two groups; an experimental group, which included 9 participants, and a control group, which included 8 participants. Both groups were asked to answer some demographic questions, take a pre- and post-CASAS assessment, and answer a MRQ about the experience of using technology in reading English. The interviews for students from both groups were conducted in the period between the pre- and posttests. The data was collected after five weeks of the experimental group using the ELP computer lab once a week.

Conclusion

Firstly, there was no significant difference between the academic performance of ESL students who were taught reading by using technology and those who were not. Secondly, there was no significant difference between the reading motivation development of ESL students who were taught reading by using technology and those who were not. Such results should not be generalized due to the procedural measures, such as sample size and technology applications. Therefore, future research should consider sample size in terms of the number and nationalities of participants. The interview answers further proved the results seen in the test scores and clarified understanding of the research results. New technology applications should be used to meet students' expectations.

Recommendations

Due to the findings of the present study, which showed insignificant results between the experimental and control groups, the researcher has some recommendations for future related studies. The first recommendation is for the ELP to replace the old software that is being used with a new version to help build students' language skills. Second, the ELP should effectively use social media websites, which might be an attractive means to help students master the English language. Third, the study showed that several students do not have the desire to attend the class. The instructor, with the ELP administration, needs to find a solution for this problem and discuss the issue and solution with the students. Fourth, the study showed that the students were familiar with their touch screen devices, computers and spends a large amount of time surfing the Internet daily. Therefore, using reading software at the English lab once a week, as it is assigned, is not enough for developing students' reading skills. This technology should be utilized much more frequently.

Fifth, it seems that some students in this study need more communication and interaction with the community, which would give them the confidence to practice and share language knowledge, especially with native speakers. This point might lead the ELP to look for a Conversation Partner Program. Finally, students in this study work for the test scores more than gaining knowledge about the language. The students mentioned many times during the interviews that the biggest concern is about scores. That thinking adds stress, which means the students don't have time for free reading, such as magazines or newspapers.

Suggestions

1. This study was implemented on a small sample, which limited the study's outcomes. A study with a larger sample of ESL students is recommended for significant outcomes to can be generalized.
2. This study focused on quantitative methods more than qualitative methods. However, more qualitative methods, such as observation, should be conducted to see the factors that might affect the learning of ESL reading.
3. More research is needed to assess the effect of the gender and nationalities on the ESL students.
4. More research is recommended to investigate the impact of using technology with other subjects such as reading, listening, speaking, and writing, as well as, with different levels of English language skills.
5. It is also recommended that the influence of learning to reading by using technology with other languages like Spanish or Arabic as a second language is investigated.

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