

THE EFFECTS OF OLABS IN TEACHING PREPOSITIONS TO INCREASE PUPILS' RETENTION

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STUDENT OUTPUTS

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Abstract: Many learners in Asian countries including the Philippines today are experiencing difficulties in studying English language especially the use of prepositions. This study presented findings from a quasi-experimental research design that compared the scores of two groups of pupils from a public school in Caloocan City. The purpose of this study was to determine and discuss the effects of the integration of Information Technology (IT) in education. This study aimed to prove that online virtual laboratories like OLABS funded by the Ministry of Electronics and Information Technology (MeitY) have significant effects to increase the retention and understanding of pupils about the use of prepositions. Drawing from the literature, we provided articles which proved that instructions carried out with IT through virtual laboratory significantly increase students' achievement. The researchers investigated and found out that online virtual laboratories have significant effects to pupils' achievement and performance in school.

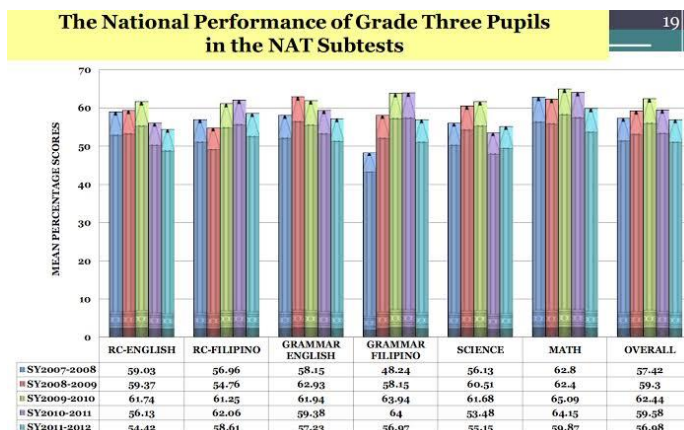
Keywords: OLABS, IT, online virtual laboratories, virtual simulations

Introduction

Preposition usage is one of the most difficult aspects of English grammar for non-native speakers to master. Preposition errors account for a significant proportion of all ESL grammar errors (Chodorow, Tetreault, & Han, 2007).

English is one of the most difficult subjects that elementary pupils take especially among Asian countries. English language is truly hard to learn given the fact that Asian native languages are really far different from English language unlike in other countries where English is their native language and not just a second language. Preposition errors account for a significant proportion of all ESL (English as a Second Language) grammar errors. They represented the largest category, about 29%, of all the errors by 53 intermediate to advanced ESL students (Bitchener, Young, & Cameron, 2005), and 18% of all errors reported in an intensive analysis of one Japanese writer (Murata & Ishara, 2004). Preposition errors are not only prominent among error types, they are also quite frequent in ESL writing. Dalgish (1985) analyzed the essays of 350 ESL college students representing 15 different native languages and reported that preposition errors were present in 18% of sentences in a sample of text produced by writers from first languages as diverse as Korean, Greek, and Spanish (Chodorow, Tetreault, & Han, 2007).

Like in any other Asian countries, Filipino pupils also experience difficulties in understanding and studying English language especially in public schools. This is truly evident in their decreasing scores in annual national achievement tests.



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One of the most common lessons in English subject wherein pupils experience difficulties is the correct use of prepositions. Perhaps because there is a wide range of prepositions to choose from in English language in which pupils often commit mistakes in their correct usage.

Today, Information Technology (IT) is widely used especially in education. 21st century learners really learn well if there is an integration of IT in education. Many researches have already found that pupils increase their understanding and retention if they are motivated through the use of IT in education.

One of the widely used IT in education is the virtual laboratories wherein pupils enjoy virtual simulations while learning and studying. They are both learning and enjoying at the same time to increase retention and understanding of the lessons.

Many have already formed online virtual laboratories across different subject areas. One of them is the Ministry of Electronics and Information Technology (MeitY) which is funding the online laboratories also called OLABS. They have online laboratories for different subject areas like English. And one of the topics in OLABS is the prepositions which is what the researchers used in the study.

Literature

In terms of rendering education and teaching more meaningful and lasting, a wide variety of teaching materials are utilized for emphasizing on the fundamental points of topics, and keeping students' interest, attention and eagerness for learning high. Within the education process, the necessity of presenting information through various means gives providence to the utilization of new information technologies instead of the conventional educational tools and materials (Isman, Caglar , Dabaj, Altnay, & Altnay, 2004). The primaries of these are the materials prepared with the aid of computers. Because computers are capable of saving, processing and displaying a great number of information. Furthermore, the capability of computers to present information in visual, audial forms and through interactive means creates a great potential for education (Ornstein & Lasley, 2004). Effective use of computers in education increases the quality level of educational instructional materials.

Virtual laboratory programs are defined as programs that are adapted according to the students' and teachers' needs, and that integrate modeling, simulation and information technologies in order to create an environment of high interaction. In addition to this definition, virtual laboratory programs are also defined as highly interactive and educational computer tools that include multimedia, audio, images and videos and that run according to a certain logical sequence and within mathematics rules (Guzzi, Scarpanti, Baliista, & Di Nicolantonio, 2005). According to another definition, virtual laboratories are environments developed to provide students with the means to access experiments at the desired place and time, and to make education with mobile tools possible (Alkouz, Al-Zoubi, & Otair, 2008). Yet another definition describes virtual laboratories as interactive learning environments that utilize computer technologies, simulations and various learning technologies in order to carry the face-to-face laboratory activities into the digital medium (Scheckler, 2003). On the other hand (Prieto-Blazquez , Herrera-Joancomarti, & Guerrero-Roldan, 2009), who set forth a new definition by examining and synthesizing several conducted studies, defined virtual laboratories as interactive virtual learning environments that are adapted according to students' and teachers' needs and that embody all pedagogical, technological and human-specific resources in order to perform applied experiments. These programs also include a software system, Simulator and smart teaching systems (Scherp & Scherp, 2002). Virtual laboratories are simulations of real laboratories. Their most prominent feature is a highly interactive user interface. In a virtual laboratory program, the user can move objects, use laboratory equipment and carry out experiments by using mouse and keyboard. In short, virtual laboratories can be described as simulation-based multimedia (Scherp & Scherp, 2002). (Jeschke, Richer, & Zorn, 2001) reported the characteristic features of a virtual laboratory

as being virtual, complex, flexible, structuralist, an experimental approach to intangible objects, trial-error approach, 7/24 accessibility and reliability.

Being a necessity in education also in pedagogic terms, virtual laboratory environments enhance students' problem solving skills, support investigative learning scenarios, adapt to individual learning methods, support supplementary learning scenarios, demonstrate the effects of other areas through applications, increase students' motivation and encourage teamwork (Jeschke, Richer, & Zorn, 2001).

Virtual manipulative (VM) is defined as “an interactive, web-based visual representation of a dynamic object that presents opportunities for constructing mathematical knowledge,” (Moyer, Bolyard, & Spikell, 2002).

Researchers reported that instructions carried out with virtual laboratory significantly increase students' achievement (Dalgarno, Bishop, Adlong, & Bedgood, 2009). Virtual environments allow students to observe the process in more details, compared to talk-and-chalk method of the traditional classroom. In addition, virtual environments foster attention and motivation towards the course by supporting a discussion platform among partners, peers, students and teacher (Dobson, 2009).

The theory of constructivism suggests that learners construct knowledge out of their experiences. It says that people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences (Hedge, 2000).

One the basis of constructivism, teachers should encourage students to constantly assess how the activity is helping them gain understanding under the environment of online multimedia courseware. By questioning themselves and their strategies, students ideally become "expert learners." This gives them ever-broadening tools to keep learning. With well-planned online multimedia courseware, the students learn how to learn. In the process of online multimedia courseware's design and multimedia teaching, teachers should pay more attention to students' preexisting knowledge (Skeha, 1998).

Purpose of the Research

The purpose of this research is to determine the impact of the integration of information technology in education through virtual laboratory OLABS on public school pupils' retention and understanding of prepositions in English language using.

This research paper aims to identify the effects of integrating information technology in teaching English lessons using virtual laboratory OLABS and determine if it really increases retention of pupils and improves their understanding. Moreover, this will facilitate their learning of English lessons. The researchers aim to motivate the learners in studying English language through the use of IT in education.

Methods

This study adopted a Quasi-experimental research design in which a stimulus is administered to only one of the two groups whose participants were randomly assigned. Quantitative procedures and treatment of data collected were used including the previous general average of pupils in English and posttest scores of both controlled and experimental groups. This is a comparative study between the groups which are exposed to virtual laboratory and which are not.

Two groups composed of 40 pupils per group from Grade 4 in a public school in Caloocan City participated in this study.

This study used the previous general average of the participants in English and their scores in posttest which will undergo independent t-test analysis to determine if there is a significant difference between the two groups.

This study used premade online virtual laboratories in the web called OLABS funded by Ministry of Electronics and Information Technology (MeitY). This online virtual laboratory has so much to offer across different subject areas including English with different lessons like the use of prepositions which is the focus of the study. Lessons are presented in the web in theory and in laboratory. In theory, pupils can study the use of prepositions with the help of the teacher. And in laboratory, pupils can apply what they have learned through virtual simulations of activities and exercises.

After the discussion of prepositions with the use of OLABS to the experimental group of pupils, a posttest will be administered to the two groups of pupils. Pupils' scores will be compared using the T-test to determine if there is significance between the scores of two groups of pupils and their scores in pretest.

Results and Discussion

An independent samples t-test was conducted to compare the previous general average of two groups of pupils in English.

Table 1 showed the mean, standard deviation and the independent t-test result of the previous general average of participants in English. It showed that there is no significant difference in the previous general average of the controlled group (M=81.75, SD=1.71) and in the previous general average of the experimental group (M=82.10, SD=1.74) conditions; $t(78) = 0.909$, $p = 0.366$

Table 1
Mean, Standard Deviation and Independent t-test Result of the
Previous General Average of Participants in English

Groups	Mean	SD	T	df	sig (2-tailed)
Controlled	81.75	1.71	0.909	78	0.366
Experimental	82.10	1.74			

An independent samples t-test was also conducted to compare the scores of the two groups of pupils in the posttest.

Table 2 showed the mean, standard deviation and the independent t-test result of the scores of two groups of pupils in the posttest. It showed that there is a significant difference in the scores of the controlled group in the posttest (M=21.63, SD=2.53) and in the scores of the experimental group in the posttest (M=24.10, SD=3.31) conditions; $t(72.94) = 3.757$, $p = 0.000$

Table 2
Mean, Standard Deviation and Independent t-test Result of the
Scores of the Participants in the Posttest

Groups	Mean	SD	t	df	Sig (2-tailed)
Controlled	21.63	2.53	3.757	72.944	0.000
Experimental	24.10	3.31			

Conclusions and Recommendations

The study found out that the use of OLABS contributed to the performance and retention of pupils in studying prepositions. The use of online virtual laboratories and simulations helps pupils to understand better the lessons about prepositions. These online laboratories increase pupil retention of the lessons. Learners can formulate and construct their own knowledge about the lesson using the online virtual laboratories. That's why it's recommended to use of online virtual laboratories and simulations in every discussion of the lesson and provide learners with meaningful and enjoyable kind of instruction.

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