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RESEARCH PAPER

Multimedia PowerPoint-based Vocabulary Acquisition: A Case Study of Pakistani ESL Learners

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ABSTRACT

This study has investigated whether the students who acquire foreign language vocabulary through the CALL technique of multimedia PowerPoint learn more effectively than the students get passed through the traditional teaching method in a classroom for the learning of same vocabulary instruction. Moreover, the study has explored the feelings and attitudes of the learners in multimedia PowerPoint assisted vocabulary classroom. The present study follows experimental design. Two groups took pre-test and post-test before and after the intervention of both methods. The scores were measured by usingSPSS-16 and t-test was employed to compare results of both the groups. This study collected quantitative data from the students' performance in the test as well as by a questionnaire having four point Likert scale. The findings revealed the significant difference in vocabulary achievements of experimental group and control group. It was found that 64% learners had positive attitude towards this innovative method of learning. This study has presented a research-based indication that CALL method was more effective than traditional method of learning vocabulary for the students of intermediate level.

Introduction

This study has investigated how the vocabulary learning of ESL learners at intermediate level can be enhanced with the effective use of multimedia technology in the classroom setting. Computer Assisted Language Learning (CALL)is considered as a complete research area because of versatile integration of information and communication technologies in language education. The educators and pupils of language are getting familiarity with the computer usage to accomplish their core purposes of language learning and teaching. In a broader context, CALL can be considered as searching and studying application related to language learning and teaching on the computer whether online or offline.

The main purpose of the study was toevaluate the effectiveness of Computer Assisted Vocabulary Learning in particular academic context of Pakistan. Language teachers and students have got advantages from computer usage to enhance their learning

process. There are numerous responsibilities on the part of language teachers like presentation of language items, helping language students in practicing the items presented, and providing opportunities to students to improve their language skills i.e. reading, writing, listening and speaking of target language. To establish a proper language learning environment, a sufficient amount of time is needed from language teachers to cover all the phases of language process. As the teachers have huge workload, they can take help from computers in their teaching areas like vocabulary learning and revision. The language students may be provided with multimedia based vocabulary presentation using computer learning environment. They can revise such items in CALL centers which were distributed by following principles of spaced repetition. On presenting passive aspects of vocabulary by computer programs, language teachers should allocate proper time to teach target language and actual communicative aspects vocabulary. Moreover, language teaching & learning related programs may use vocabulary software by viewing their effectiveness and classroom instruction in a complementing fashion.

Literature Review

Integration of Technology into Foreign Language Teaching

The combination of computer technologies through CALL programs provides more opportunities for communication with a number of attractive resources and responsibilities into English language learning classrooms to improve the learning abilities (Lim & Shen,2006).The use of technology is evident in every filed including education since the IT inventions. With the advent of 20th century, these innovations in technology have dominated the entire world. Mostly these technologies are taken as associated with industry, communication, sciences and business. The areas of education, through radio and television, also applied the technology usage in developed countries in 1980's. In the 1990's, the use of moving pictures, VCR, VHS, CD players, cassettes and slides projector in classroom was made possible by the technology. In the 21st century, this growing technology field included more useful tools like computers, digital projectors, DVD and other multimedia equipment. In this way, technology has supported education in one way or other which also improved responsibility on its users*(ibid)*.

Learning a foreign language like English is crucial today because of the phenomenon of globalization. Therefore, these forms of technological equipment are being used by teachers as tools for helping students in reaching their goals. No doubt, technology has made teaching and learning processes easier than before but it also has limitations. The researchers who belong to the profession related to English as a foreign language teaching observe that the use of technology not only motivates students but also develops their language skills. English language learners get benefit from the Computer Assisted Language Learning (CALL) programs in which application of the technology is evident. The first and main advantage of this application of technology through CALL is activating all of four language skills in English learning. In addition, Computer Assisted Language Teaching (CALT) programs provide a sense of motivation for language teachers (Reeves, 1998). Furthermore, CALT has become a basic source for teachers to reach their aims and objectives in language teaching profession.

It is, now, used, usually, in a diversity of instructional situations. Similarly, CALLattempts to cover both, theoretical understanding of information technology as well

as of polishing practical skills. For that reason,the language educators are increasingly motivated to acquire CALL proficiency. Consequently, it is becoming more and more important need for teachers to be familiar with all applications within the classroom. The CALL technology is now an essential part of EFL classrooms and is likely to suppose getting importance as technology develops. Language educators should develop, implement, and evaluate different activities in CALL classrooms.

Communicative and Interactionist Approach to SLA

Krashen (1985) strongly argues in the favor of communicative language teaching. His theory on Second Language Acquisition (SLA) is based on the studies of first language acquisition in which he admits that comprehensible input is vital factor in learning. Krashen (1985) believes that learner can acquire a language with the desire to understand the meaning of second language. In the monitor model presented by Krashen (1981), the initial step of *Inter Language System*is considered as acquisition promoted by essential factors of intelligible input. The present study has also explored interactionist theory to explain the role of computer assisted technology in second language learning classroom. Following the interactionist approach, the learners need interaction in real life situation to acquire language (Hatch, 1978; Long, 1991). The theory focuses on three main components in the computational model, including input, interaction and output. Hence, the traditional classroom activities must be mediated by the social interaction. Based on interactionist approach and computer mediated learning, Chapelle (1999) suggests that computer assisted instruction may benefit learners if the input is designed in a way to generate interaction and thus results in the effective language output. These structures resulting as output must lead the learners for self-correction (Mills, 2000). However, the learners need corrective feedback to monitor and regulate their learning process (Mackey &Gass, 2006).

Using Multimedia PowerPoint in Vocabulary Acquisition

Vocabulary knowledge is an essential component of foreign language acquisition. Various studies (e.g., Tokac, 2005) have found that computer and multimedia environment support the vocabulary learning process. The linguistic competence is usually measured by evaluating the vocabulary performance. According to Nation (2006), the least number of vocabulary a foreign language learner should know is about 4000 everyday words. However, the foreign language learners find it challenging to reach this level. The second language teachers should focus on using such classroom techniques that can help learners in enhancing vocabulary to the maximum possible limit. Chang (2007) conducted a study in which English was taught for two months and fifteen days using PowerPoint software; the result reflected the positive effect of CALL methodology. Similarly, in another study, Cellat (2008) identifies the usefulness of learning and retaining process of a foreign language vocabulary for the students who study under CALL environment in comparison with the students who go through the tradition teaching styles of their teachers to learn the same foreign language vocabulary. The research finds out that the group of students went through the computer assisted vocabulary instruction did very well on immediate as well as delayed tests as compared to the group of students led by traditional teachers. Likewise, Tozcu&Coady (2004) carried out a study to examine the impact of direct vocabulary learning on the vocabulary development, reading abilities and the efficiency of word construction of students with the use of computer assisted language learning; the results showed the positive impact of CALL technology.Therefore, multimedia integration is

recommended at every stage of the process approach for better learning outcomes (Kumar & Sultana, 2016).

Emerging Global Trend of CALL

Koçak (1997) has attempted to investigate the efficiency of computer assisted language learning in vocabulary teaching and learning. The findings of the study were also in favor of the hypothesis that the group under experiment also liked working with computers, they tended to learn and retain a bigger amount of vocabulary than the controlled group. Similarly, Kabata and Chao (2005) conducted a study for Japanese language program in which they employed multimedia courseware to judge the effectiveness of this method. The finding of assessment revealed that the implementation of CALL technologies had positive effect on ESL language learners and teachers. Likewise, Abu-Seileek (2007) conducted an experimental study to investigate the effectiveness of two mediated techniques – supportive and combined learning – planned for teaching and learning verbal skills, listening and speaking; they results supported the CALL teaching. In Pakistan, English has gained a status of second language according to its applications in Pakistani society. At different levels in Pakistan it is a medium of education, and in particular conditions it plays the role of lingua franca at the higher level of classes where students use their native language or English language for their communication. Farooq, Chaudhry, Shafiq & Berhanu(2011)assert that the environment at home put deep effects on the academic performance of pupils. The parents having good computer literacy background are able to provide an ideal environment for their children that suits to academic success. Likewise, Arshad, Attari and Elahi (2012)in the finding of their study have also mentioned that the socio-economic status of the parents directly impacts their children's learning in term of providing appropriate educational resources, e.g., computer, internet and related software programs. The primary English teachers from 89 countries were passed through a global survey in which 21% of themselves mentioned having no specialized qualification to teach English, particularly the computer related expertise (Emery, 2012). In another study, Davies (2019), has found the effectiveness of Moxtra for learning language in the context. He further recommends the program not only for supporting blended learning but also for teacher collaborative learning environment.

Material and Methods

As this studywas mainly an experimental research, numerical data was collected from the scores of pre- test which was conducted one day prior to the treatment of subjects and post-test that was conducted after 30 days of treatment and one day after the program ended. Both qualitative and quantitative data collection techniques were used to collect reliable and valid data which could explain the study questions appropriately. Students' attitude was observed through researcher diary notes and interviews of students. Further, the questionnaire also provided the data related to the feelings and opinions of respondents.

Participants

The study was carried out with the help of 50 participants / students who were studying English at Chenab College Faisalabad. The intentions were to assess the effectiveness of computer and multimedia usage as vocabulary learning tools in English

learning programs; all the student participants were from Chenab College. The students were enrolled in the first part of the academic year. The age range of the participants was from 17 to 22 years old. All of the participants were non-native speakers of English.

Procedure: CALL-based Lesson Plan

A CALL-based lesson plan was designed to instruct vocabulary lessons to experimental group. This plan was based on the guidelines provided on the previously conducted similar studies (e.g., Khoshsima&Khosravani2014). The group under experiment was instructed to use smart-board and PowerPoint slides, while the controlled group was asked to use the textbook and traditional oral presentation with teacher writing on the board, word grouping and memorization of vocabulary. One class of 25 participants was assigned to the teacher-led instruction condition; other class of 25 participants was assigned to the computer-instruction condition. The computer assisted teaching procedures were integrated into the other activities designed for both the classes. It was important that both the sections were taught the same material and vocabulary bank and both the classes were conducted at the same time. The material and the vocabulary bank consisted of the words carefully selected from the textbooks. The computer group learned and practiced the target words using multimedia PowerPoint software, and the control group learned the target words via traditional method.

Instrumentation

Pre-test and post-test

In order to access and analyze the students learning capability through CALL method a test was designed after consultation with the experts. The pre-test was consisted of 5 different types of objective questions including fill-in-the-blanks, sentence usage, synonyms, antonyms and word matching section. The same test was used as for the post-program evaluation of students' performance in vocabulary acquisition. In order for the tests to be both valid and reliable, these two tests were piloted on two similar groups other than the experimental groups. This piloting aimed at timing of the test and determining the items difficulty and items discrimination as well as calculating the reliability of the tests. Kadar-Richardson Reliability Coefficient (KR 21 Formula) was used to measure the reliability of the test which was 0.70 for intermediate vocabulary test respectively.

Questionnaire

In the present study, one questionnaire was used for collecting quantitative as well as qualitative data. The questionnaire comprised thirteen closed ended questions and two open ended questions. Students' response, their feelings and attitude towards computer assisted language learning through PowerPoint software were evaluated in this questionnaire. A four point Likert scale was used to get the information from experimental group experience in language classrooms.

Interviews

Interviews from the selected students were important for qualitative data collection. The structured interviews were conducted from the students randomly to get their feedback and know about their feelings.

Results and Discussion

Data Analysis

To accomplish the purpose of exploring the research questions of this study, qualitative and quantitative data collection tools were used. The quantitative data was collected through vocabulary recognition test. The pre-test for vocabulary was carried out before starting the treatment sessions and for the same second time post-test was conducted immediately after the completion of the treatment session by the participants. The t-test was used for the comparison of groups' pre and post-test scores. In terms of experimental group's post-test scores and control group's post-test scores, significant difference was counted at .000<p0.05 level.

Table 1 shows the result that the descriptive statistics of Pre-test Scores of *N* 50 Mean value is 34.480 and Std. Deviation is 7.730.

Table 1
Pre-test Scores

	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Pre-Test Scores	50	12.00	48.00	34.4800	7.73078
Valid N (list wise)	50				

Table 2 shows that the descriptive statistics of Post-test Scores of *N*25 Mean value is 71.400and Std. Deviation is 4.847.

Table 2
Experiment-Group Post-test Scores

	N	Minimum	Maximum	Mean	Std. Deviation
Experiment-G Post-test Scores	25	64.00	83.00	71.4000	4.84768
Valid N (list wise)	25				

The effects of CALL method on the students, after analyzing and comparing the result of pre-test and post-test, are indicated in Table 3. No significant differences were found between the means on analyzing total of pre-test scores but in term of post-test, the analysis of total scores revealed vivid effects of CALL method on the vocabulary performance of intermediate ESL learners.

Table 3
Comparison of Mean Scores between Pre-Test and Post-Test Scores of Experimental Group

Group	**N**	**d.f**	**M**	**SD**	**t-value**	**P-value**
Pre-Test Scores	50	46	60.67	10.67	1.02	0.02
Experimental Group (Post-test)	25	24	58.32	9.08		

As mentioned above, the mean scores of experimental group was calculated as 71.400 and as 51.440 for Control group. The Table 4 indicates that significant difference at .000<p0.05 level.

Table 4
Mean score comparison between pre-test and post-test results of experimental and control group

Group	N	Df	M	SD	T-value	P-value
Post-test Scores(Experiment-G)	25	24	71.400	9.43	73.64	.000
Post-test Scores(Control group)	25	24	51.440	7.20		

The results have clearly shown the better performance of students who were taught vocabulary using PowerPoint multimedia techniques than those who were instructed through traditional means of teaching. It is found that the text and image association proved as a successful strategy in conveying the solid meanings and affecting the vocabulary learning ability of learners. The learning and retention of related images proved more effective than translating the words. During the learning process, the learners successfully made the connection between the targeted vocabulary word and its displayed image accompanied with illustrations and this ultimately positively affected their posttest results.

The Table 5 shows the frequency and percentage of the sample responses given by the participants of experimental group after the conduct of classes. The purpose of this data was to see their level of comfort, motivation and interest in the computer assisted classroom teaching environment.

Table 5
Sample Data from the Opinions of the Participants

How multimedia software program PowerPoint can be effectively used in English language classroom?	Strongly Agree		Agree		Disagree		Strongly Disagree		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Improve learning new vocabulary through online vocabulary games.	15	60	7	28.0	0	0	3	12.0	25	100.0
Improve learning new vocabulary through online vocabulary games.	8	32.0	8	32.0	5	20.0	4	16.0	25	100.0
Image are very helpful in understanding and remembering new words.	7	28.0	11	44.0	0	0	7	28.0	25	100.0
PowerPoint activities motivate learners to learn new words better.	9	36.0	7	28.0	6	24.0	3	12.0	25	100.0

The Table 6 presents the response frequencies related with the questions items asked from the learners after the program. Then after, Chi-square analysis was run to calculate the significance of distribution of the responses on frequencies for one variable at one time and determine the probability that according to Brown (2001) departs from the expected frequency distribution. According to the principles of Chi-square test, the anticipated frequency for each item was stated.

Table 6
Students Comfort Level in Call Classroom

	You feel comfortable with the use of computer technology in the classroom?			Total
	Low	Medium	High	
Strongly Disagree	3	0	0	3
Disagree	4	0	0	4
Agree	2	9	0	11
Strongly Agree	0	1	6	7
Total	9	10	6	25
Chi-square = 35.649a d.f. = 6		P-value = .000	Gamma = .100	

Findings and Discussion

ESL learners' vocabulary achievement was found to be influenced by computer assisted language learning technology, i.e. multimedia PowerPoint based activities. The study examined the effectiveness of using MS PowerPoint software to teach English as Second Language (ESL) to the students registered in English language classes. The study also investigated the usefulness of slide procedures with computer based matching exercises, games and story preparing language exercises. This study also determined the positive attitude of participants towards this innovative and alternative technique of PowerPoint.

Using Computer Technologies in Learning English

The present study of EFL students has described that most of the responses from learners were positive towards the functionality of computer and internet in English learning. The learners proclaimed that the technology-based classroom environment improved their learning. The mean scores of the attitudes towards computer technologies as a whole were71.4 and 51.4. This value indicates that the participants have expressed the high level of appreciation for the significance of employing computer-technologies in English learning process. The study has approached its results in accordance with the study findings in the same area conducted by the other researchers. This investigation has demonstrated positive attitude of the majority of the participants (64%), their reactions and perceptions of the productivity of PowerPoint as supportive materials in developing their vocabulary, knowledge and reading skills.

The results have clearly shown the better performance of students who were taught vocabulary using PowerPoint multimedia techniques than those who were instructed through tradition means of teaching. It is found that the text and image association proved as a successful strategy in conveying the solid meanings and affecting

the vocabulary learning ability of learners. The learning and retention of related images proved more effective than translating the words. During the learning process, the learners successfully made the connection between the targeted vocabulary word and its displayed image accompanied with illustrations and this ultimately positively affected their posttest results. Moreover, it helped them improve their scores during the rest of the course. Therefore, it was found that pictures and activities had a great impact on students' comprehension. The results of this study have shown that words are better memorized and comprehended when they are associated with images than their association with only simple text. These results go in conformity with the previously conducted studies (e.g., Oxford, 1990). The students who were exposed to computer mediated learning condition were able to memorize vocabulary more effectively and they also showed a positive attitude towards the learning process.

The intermediate learners' interviews revealed that the presentation on PowerPoint slides was a very useful, interesting and fun way to learn vocabulary as compared to the learning only from the textbook, which seems boring and more time taking. The exercises in general were liked by the learners**.** The findings of this research have confirmed the value of PowerPoint as an effective tool in English Language classroom to teach vocabulary in an alternative way. A few intermediate learners' interviews also expressed that they were in favor of learning from a teacher as thestudy through multimedia and PowerPoint software was not much appreciated by them due to their lack of expertise in operating computer and internet.

Conclusion

In conclusion, the treatment effect of vocabulary instruction method through multimedia assisted vocabulary learning was positive suggesting there was statistically significant difference in the effectiveness of the two teaching approaches. This study concludes that CALL vocabulary software was more effective than traditional classroom teacher-directed vocabulary learning. Moreover, the finding revealed that there was a healthy impact on students' motivation level and learning behavior. The learners responded very positively towards the use of multimedia PowerPoint techniques incorporated in their lessons for vocabulary learning. The ICT integrated teaching strategies proved very successful in vocabulary acquisition. The participants of the study expressed their high level of satisfaction with the online and offline computer activities assisted by multimedia technology. Based on the findings collected in this study, it may be suggested that this computer assisted language learning technique, i.e., multimedia PowerPoint software program, be recommend in the institutes for teaching vocabulary in place of using outdated style of reading simply from the textbooks or flashcards, as part of traditional techniques of teaching and learning in an ESL class.

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