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An Experimental Study of ICT and Multimedia Technologies in Teaching Writing Skills in English Language

S.Gunasekaran and L.Bapitha

Abstract
This study was conducted with the main purpose of assessing the effect of both ICT and Multimedia technologies in teaching writing skills in English language at the undergraduate level. Subjects in the control group were taught through traditional face-to face instruction, whereas subjects in the experimental group were taught through ICT and Multimedia technologies. The pre-test, post-test, ICT and Multimedia perception questionnaires were used to measure, the prior knowledge, learning gains, and perceptions of students towards ICT and Multimedia respectively. In this study, two sets of questionnaires have been employed, i.e. students' perception questionnaire and teachers' attitude questionnaire. In order to measure the efficacy of some identified applications of ICT and Multimedia technologies, an intervention program has been designed for this study. The program is called Multimedia Technology Enabled Writing Instruction Program (MTEWIP). To ascertain proper implementation and, thus, the credibility of the findings, classroom observations were also conducted during the intervention.

Keywords: ICT, Multimedia, Technologies, Control Group, Experimental Group, Pre-test. Post-test, Perception Questionnaires, Measure.

Introduction
Technology-based language instruction is an innovative field that is drawing the attention of the teachers, students as well as researchers. This study has been conducted to find out how ICT and multimedia assisted instruction influences the learners 'performance related to effective writing skills. The present study discusses the need of ICT and multimedia technologies in education in general and English language education in particular, and also deals with the problems which have led to the proposed study, the objectives and significance of the investigation.

Statement of the Problem
The issues of poor and ineffective teaching as well as learning of English writing skills had been noticed among undergraduate students in the engineering colleges of Tamil Nadu. At present, there are many Information Communication Technology (ICT) and Multimedia technologies such as Internet, YouTube, Instant Relay Messenger, Smart Phone, Projector, Television, E-books, Graphics, Mp3 Player, Video player and Animations. These technologies have been contributing enormously to teaching and learning of the English language. Many ICT's and Multimedia technologies are great sources for language activities, material in teaching and learning English language. However, many teachers and students may not have necessary attitudes, perceptions and various technical skills to make full use of these technological resources. Therefore, this study investigates teachers'attitudes, students'perceptions for using ICT and Multimedia as resources for effective teaching and learning English language skills, focusing on writing. Considering the importance of ICT and multimedia technologies in the teaching learning process and related aspects, the present investigation focuses on "Application of ICT and Multimedia in Teaching Writing Skills in English Language: An Experimental Study".

Objectives of the Study

The major objectives of the investigation:

1. To study learners'perception towards ICT and multimedia technologies as nontraditional forms of instruction.
2. To study teachers'attitude towards ICT and multimedia technologies as nontraditional forms of instruction.
3. To study teachers'attitude towards ICT and multimedia technologies as nontraditional forms of instruction.
4. To study teachers'perceived self-confidence in using ICT and multimedia technologies in their teaching as non-traditional forms of instruction.To find out the effectiveness of the use of ICT and multimedia technologies for teaching and learning writing skills at Under Graduate level.
5. To identify the impact of ICT and Multimedia applications on the student 's achievement in learning writing skills.
6. To find out the difference, if any, in the achievement gain and retention scores between the control group and experimental group.
7. To compare the achievements of the ICT and Multimedia based instruction in teaching of writing skills over traditional methods of teaching writing skills.
8. To study the impressions and reflections on the way in which students reacted to ICT and multimedia technologies in the language classroom.

Significance of the Study

The significance of this study is paramount as it contributes valuable insight and theory into the successful implementation of multimedia technologies as instructional tools, especially in the light of the number of resources being used to teach and learn English language. The results of this study may be utilized to develop improved language instructional models, environments, and implementation strategies to improve the effective use of ICT and Multimedia technologies. It is increasingly important for teachers to be able to use ICT and Multimedia technologies for effective teaching and the teachers also need to have a positive attitude towards the use of modern educational technologies for accomplishing various educational objectives. It is also necessary for the teachers to have enough self-confidence to use the modern technologies for successful teaching. By identifying the teachers 'attitudes and their self-confidence towards the use of ICT and multimedia technologies, a conceptual starting point can be established for the successful implementation of various technologies related trainings to pre-service and in service teachers. Providing appropriate training in the proper contextual environment can enhance the use of modern educational technologies to achieve desired academic results.

It is evident that the potential impact of ICT and Multimedia technologies cannot be overlooked. The results of this study may contribute valuable insight and theory into the successful implementation of ICT and Multimedia technologies as teaching and learning tools, especially for English writing skills.

Scope of the Study

The present study attempts to experiment the teaching of writing skills in English using certain multimedia technologies at undergraduate level. The research has confined itself to an exclusive study of the writing components (vocabulary, grammar, punctuation and mechanics) alone without taking into account the other three skills of language, namely, listening, speaking and reading. This should not be viewed as a belief that writing is a skill that needs to be taught to the exclusion of the other skills. On the contrary, writing has to be learnt / taught in close association with the other skills. However, enormous importance given to writing in both academic and professional fields, the present study has focused on certain writing components alone.

The population and subsequent samples (60 students) were selected to conduct the experimental study. Sixty students have been taken from the institute randomly. Prior to the pre-test, the students were randomly assigned to the experimental group (30 students) and the control group (30 students) using the student identification numbers and a table of random numbers. So, this population provided the researchers with a wide breadth and diversity of students from the selected college to be represented in the sample group. The population and subsequent samples (85 degree lecturers) were selected to conduct the teachers'survey and 320 undergraduate students have been surveyed using stratified random sampling.

In this study, to examine the effect of different teaching methods on achievement in writing, the investigator manipulates method (the independent variable) by using different teaching methods in order to assess their effect on writing achievement (the dependent variable).

Table 1: Two Groups Pre-test and Post-test Design.

Group	Pre-test	Treatment	Post-test
Experimental Group	Writing Proficiency Test	Teaching Writing Skills through Multimedia Technologies	Writing Proficiency Test
Control Group	Writing Proficiency Test	Teaching Writing skills through Traditional Method	Writing Proficiency Test

The advantage of using the randomization to make certain when any differences that appear in the post-test should be the result of the experimental variable rather than the possible difference between the two groups to start with. This is also known as the classical type of experimental design and it has good internal validity.

Multimedia Technologies Enabled Writing Instruction Program (MTEWIP)

In order to evaluate the effectiveness of ICT and Multimedia supported writing instruction, a writing instruction program was designed in this study called "Multimedia Technologies Enabled Writing Instruction Program" (MTEWIP).

To implement this study successfully, the researcher has developed following research tools.

a) Students'perception survey questionnaire
b) Teachers'attitude survey questionnaire
c) Pre-test
d) Post-test
e) Classroom Observation checklist

Students' Perception Survey Questionnaire:

The questionnaire on students'perception' towards ICT and Multimedia has been used for this purpose. It is mainly divided into two sections as follow:

SECTION – 1: Students'Perceptions towards the use of ICT
SECTION – 2: Students'Perceptions towards the use of Multimedia

Table 2: Distribution of Questions in the Students' Questionnaire.

Sections	Section-1	Section-2
Question Type	Students' Perceptions towards the use of ICT	Students' Perceptions towards the use of Multimedia
NQ	15	15

Note: NQ: Number of Questions

Teachers' Attitude Survey Questionnaire

The questionnaire on teachers 'attitude towards ICT and Multimedia has been used for this purpose. It is divided into five sections as follow:

SECTION – 1: Background Information
SECTION – 2: Teachers'Attitude towards the use of ICT
SECTION – 3: Teachers'Attitude towards the use of Multimedia
SECTION – 4: Perceived Self-confidence in using ICT
SECTION – 5: Perceived Self-confidence in using Multimedia

Table 3: Distribution of Questions in the Teachers' Questionnaire.

Sections	Section-1	Section-2	Section-3	Section-4	Section-5
Questions Type	Background Information	Teachers ' Attitude towards the use of ICT	Teachers ' Attitude towards the use of Multimedia	Perceived Self-Confidence in Using ICT	Perceived Self-Confidence in Using Multimedia
NQ	7	15	15	8	8

Note: NQ: Number of Questions

Pre-test

A pre-test was prepared for effective writing with an aim to diagnose the students' current level of understanding of writing skills. The pre-test was conducted before the instruction and the scripts were collected. Students, however, were given no feedback on their pre-test as it was used to identify the areas to be stressed during the instruction besides enhancing their awareness to all the elements of effective writing. In the writing skills test they had been asked to respond and answer on the topics given. Alike writing skills program, in the pre-test areas had been identified which need to be polished, but they were not given any feedback regarding their pre-test as it was just to identify the areas to be stressed during the intervention program.

Post-test

Post-test has been administered after introducing the intervention program to the students. It has been administered to see the efficacy of the two different instructional methods i.e. traditional classroom instruction and using Multimedia technologies (Internet, YouTube, Instant Relay Messenger, Smart Phones, Projectors, Television, E-books, Graphics, Mp3Players, Video players and Animations).

Classroom Observation Checklist

Classroom observation was one of the methods used in this study and it was used by researcher to observe and record impressions and reflections on the way in which students reacted to ICT and Multimedia technology. The researcher used a uniform form for recording observations. Bogdan and Biklen (1992) presented a model of observation notes, similar to that used in this study where, "form was a single page with a dividing line down the middle to separate descriptive notes such as portrait of participants, a reconstruction of dialogue, a description of physical setting, accounts of particular events, or activities from reflective notes in terms of researcher's personal thought such as speculations, feelings, problems, ideas, hunches, impressions and prejudices" (Bogdan and Biklen). The researcher may give the observers comment in this section. These notes, as recorded by the researcher are in an unstructured and semi structured form.

The prompt questions that the researcher used to guide his reflection and note taking were as follows.

1. What do the students like to do and not to do in most while learning through ICT and Multimedia technology?
2. Does the learning environment in both the classrooms help in enhancing interaction between teacher to student and student to student?
3. Are they happy and motivated to come to the classroom?
4. Do students feel anxiety in the classroom?

The process of observing (Creswell, 2002) began with the selection of the site that could help the researcher to best understand the central phenomenon. The researcher entered the site and conducted multiple observations over time to obtain the best understanding of the site and the individuals. He designed some means for recording notes during an observation. The observer saw the objects and recorded field notes describing the object and reflecting on insights, hunches, and themes that emerged during the observation. A decision was made as to what would be recorded. Regarding ongoing data collection Nunan (1992) emphasised the importance of field notes as, "In light of what you find when you periodically review your field notes, plan to pursue specific leads in your next data collection session" (Nunan, 221). Descriptive field notes recorded a description of the events, activities and people. Reflective field notes recorded personal thoughts that researcher possesses and that relate to their insights, hunches, or broad ideas or themes that emerge during the observation (e.g. what sense did you make of the site, people, and situation).

Research Procedures

At the beginning of the experiment, the Writing Proficiency Test was administered to participants in the control group and the experimental group. After that, both groups received writing instruction through different instructional aids (traditional and technology supported) by the same teacher. The intervention program was executed in both the groups according to the following schedule in four weeks.

Table 4: Schedule of Classroom Instruction in Experimental and Control Group in MTEWIP.

Stage	Module	Duration
Stage-1	Conducting pre-test to know the existing knowledge level of the learners	2 days
Stage-2	Giving effective writing instructions on vocabulary	3 weeks
Stage-3	Giving effective writing instructions on grammar	
Stage-4	Giving effective writing instructions on spelling and mechanics writing	
Stage-5	Conducting post-test to see the improvement in their performance.	2 days

At the first stage, pre-test was administered. The second, third and fourth stages were devoted to vocabulary, grammar and spelling as well as the mechanics of writing instructions. At their last writing class session (stage 5), both groups of students were required to write the same WPT which could be used as a determinant if their final writing proficiency level was considered as evidence of their writing development.

Table 5: Scheme of Analysis/.

S.No.	Variables Assessed	Test Administered	Statistical Techniques Employed
1.	Achievement of the Control Group before teaching	Pre-test	Mean, Standard Deviation
2.	Achievement of the Experimental Group before teaching.	Pre-test	Mean, Standard Deviation
3.	Achievement for Control Group in teaching writing skills through the traditional method.	Post-test	Mean, Standard Deviation, _t'-value
4.	Achievement for experimental Group taught through Multimedia Technologies.	Post-test	Mean, Standard Deviation, _t'-value

Analysis of the individual sections of the writing skills test is discussed below.

Table 6: The analysis of the first section (vocabulary) The t- Test Result of the Two Groups' Pre-Test Scores related to the First Section of WPT.

Groups						
Experimental			Control			
Q.No.	**M**	**SD**	**M**	**SD**	***t***	***df***
Q1a	1.90	.923	1.90	.923	0.000	58
Q2b	4.33	.802	4.33	.802	0.000	58
Q3c	3.33	1.373	1.373	1.373	0.000	58
Q4d	3.27	1.311	1.311	1.311	0.000	58

Note. M=Mean. SD=Standard Deviation. *df* = Degree of Freedom. aSynonym. bAntonym. cOne-word Substitution. dPhrasal Verbs.

Table 7: Comparison of the Two Groups' Pre and Post-Test Mean Scores related to the First Section of WPT.

Tests							
Pre				Post			
Q.No.	**Groups**	**M**	**SD**	**M**	**SD**	***t***	***df***
Q1a	Experimental	2.90	1.494	4.00	.871	-3.010	29
	Control	1.90	.923	1.90	.923	9.001	29
Q2b	Experimental	2.27	1.337	3.73	.828	-.902	29
	Control	4.33	.802	4.33	.802	-1.795	29
Q3c	Experimental	3.63	1.608	4.50	.861	-8.085	29
	Control	3.33	1.373	3.33	1.373	2.983	29
Q4d	Experimental	3.87	1.456	4.93	.365	-3.892	29
	Control	3.27	1.311	3.27	1.311	-7.047	29

Table 8: The analysis of the second section (Grammar) The t- Test Result of the Two Groups' Pre-Test Scores related to the Second Section of WPT.

Groups						
Experimental			Control			
Q.No.	**M**	**SD**	**M**	**SD**	***t***	***df***
Q5a	.17	.379	.17	.379	0.000	29
Q6b	3.53	.973	3.53	.973	0.000	29
Q7c	4.17	.874	4.17	.874	0.000	29
Q8d	3.70	.988	3.70	.988	0.000	29

Note. M=Mean. SD=Standard Deviation. *df* = Degree of Freedom. aVoice. bConcord. cArticles. d Prepositions.

Table 9: Comparison of the Two Groups' Pre and Post-Test Mean Scores related to the Second Section of WPT.

Tests							
Pre				Post			
Q.No.	**Groups**	**M**	**SD**	**M**	**SD**	***t***	***df***
Q5a	Experimental	2.00	1.414	3.00	1.203	-7.090	29
	Control	.17	.379	.17	.379	-.472	29
Q6b	Experimental	3.67	1.061	4.23	.626	4.111	29
	Control	3.53	.973	3.53	.973	2.677	29
Q7c	Experimental	3.13	.900	4.03	.809	-12.300	29
	Control	4.17	.874	4.17	.874	-3.525	29
Q8d	Experimental	2.93	1.143	4.00	.947	.611	29
	Control	3.70	.988	3.70	.988	-1.300	29

Table 10: The analysis of the Third section (Spelling and Mechanics of Writing) The t- Test Result of the Two Groups' Pre-Test Scores related to the Third Section of WPT.

Groups						
Experimental			Control			
Q.No.	**M**	**SD**	**M**	**SD**	***t***	***df***
Q9a	2.23	1.040	2.23	1.040	0.000	29
Q10b	3.40	1.102	3.40	1.102	0.000	29
Q11c	1.60	1.303	1.60	1.303	0.000	29
Q12d	1.63	1.098	1.63	1.098	0.000	29

Note. M=Mean. SD=Standard Deviation. df = Degree of Freedom. a Spelling. bHomophone. cCapitalization. dPunctuation.

Table 11: Comparison of the Two Groups' Pre and Post-Test Mean Scores related to the Third Section of WPT.

Tests							
Pre				Post			
Q.No.	**Groups**	**M**	**SD**	**M**	**SD**	***t***	***df***
Q9a	Experimental	2.83	1.020	3.87	.860	-2.523	29
	Control	2.23	1.040	2.23	1.040	3.067	29
Q10b	Experimental	2.53	1.137	3.67	.922	-5.187	29
	Control	3.40	1.102	3.40	1.102	-3.525	29
Q11c	Experimental	3.17	.986	4.40	.724	-7.184	29
	Control	1.60	1.303	1.60	1.303	-1.017	29
Q12d	Experimental	2.73	1.437	3.87	1.008	-10.422	29
	Control	1.63	1.098	1.63	1.098	-7.394	29

** $p \leq .01$.

Note. M=Mean. SD=Standard Deviation. *df* = Degree of Freedom. aSpelling.bHomophone.cCapitalization.dPunctuation

Analysis of Pre-Test and Post Test Results

The findings of the Writing Proficiency Test (WPT) which has been designed to examine the efficacy of two instructional programmes (Multimedia technologies

supported and traditional instructions). Both descriptive and inferential statistics were used in the study. With regard to descriptive statistics, mean scores as a central tendency measure and standard deviations as a measure of variability were calculated. Regarding the inferential statistics, the t-test for comparison of mean scores for independent groups and paired groups was used. Two types of t-tests were used: t-test for independent samples with the aim of comparing the scores of the control and the experimental groups, paired sample t-test was also used to compare the pre-test and post-test mean scores of the experimental group. Both the assumptions of independent samples t-test (homogeneity of variance and normal distribution of population) has been tested. The Kolmogrov-Smirnow test was used to check whether the data has come from a population that has a normal distribution. It revealed that the distribution of the sample is not significantly different from a normal distribution.

The effect-size, which is an objective and standardize measure of the magnitude of the observed effect, was measured and reported. The effect size allows results to be interpreted beyond statistical significance to practical impact and to determine if the result adds to the general body of knowledge. The "Statistical Package for the Social Sciences" (SPSS) is a package of programs for manipulating, analysing, and presenting data (Landau and Brian, 2004). The statistical analyses were accomplished by using the IBM SPSS statistical package programme for windows.

As discussed, that there are three sections in the Writing Proficiency Test (WPT). The first section which contains four items deals with vocabulary. Second section which contains four items deals with grammar. The third section deals with spelling and mechanics of writing in which the students were given questions for choosing the correct spelling for the missing word from the multiple choices, and they were supposed to rewrite the given sentences with appropriate capitalization and punctuation marks. Thus, the WPT contains total of twelve items focusing on various aspects of vocabulary, grammar, spelling and mechanics of writing. Each of these twelve items was worth five marks. Thus, the total score of the WPT was sixty marks (3x20=60).

The commonly analysed features in writing Proficiency test include vocabulary, grammar, spelling and mechanics.

While analysing the data, first the total gain scores of all the three sections of Writing Proficiency Test (WPT) were analysed using independent samples t- test (to analyse pre-test and gain score) and paired samples t-test (to compare pre and post-test performance). T-test uses the means of the two sets of data and their standard deviations to arrive at a figure which tells the researcher the specific likelihood that any differences between the two sets of data are due to chance (Denscombe, 2014: 268). So, the analysis of the individual sections of the WPT was done using the same tests. The analysis of the total gain score of all the sections of the WPT is discussed below.

Research Question

Is there a statistically significant difference between t h e experimental and control group regarding the total gain score of the WPT?

Hypothesis

There is no statistically significant difference between t h e experimental and control group regarding the total gain score of the WPT.

To ensure the equivalence of the two groups, the pre-test was administered simultaneously to both groups. An independent sample t-test was conducted to examine the two groups'pre-test scores. Table 6.3 compares the pre-test scores of the students in the experimental and control group related to all the three sections of WPT. Means, standard deviations and t -test statistics were used to detect any differences between the two groups, as shown in **Table: 12**

Table 12: Pre-Test Performance.

Groups						
Experimental			**Control**			
M		**SD**	**M**	**SD**	***t***	***df***
Pre-Test Performance	33.27	3.051	33.30	3.087	0.042	58

Note: M=Mean. SD=Standard Deviation. *df* = Degree of Freedom.

Pre-test Performance

All effects were reported at a 0.05 level of significance. Since Levine 's test for equality of variance significance value on the pre-test (0.944) is more than 0.05, the equal variance can be assumed. The average pre- test score of students in the experiment group was M = 33.27, SD = 3.051; and the average pre-test score of the students in the control group was M = 33.30, SD = 3.087. The difference between students of these two groups, analysed independently using a t-test, was t (58) = .042. According to these results, there is no statistically significant difference between the pre-test scores of the students of these two groups at the 0.05 level (p = 0.967; p> .05). The result of the t-test analysis indicated that the researcher must fail to reject the null hypothesis.

This result indicates that the subjects had the same background concerning their knowledge of the principles of effective writing before implementing the experiment. Table 6.3 also postulate that both the groups have a similar mean score in the pre-test and any gain in the academic achievement in the field of effective writing could be attributed to the method employed.

Hypothesis

There is no statistically significant difference between the pre and post- test mean scores of the WPT in both the groups.

Table 13: Comparison of the Two Groups' Pre and Post Test Scores related to WPT.

Tests						
Pre			Post			
Groups	**M**	**SD**	**M**	**SD**	*t*	*df*
Experimental	33.27	3.051	48.23	3.048	-17.802	29
Control	33.30	3.087	35.67	4.105	-2.527	29

** $p \leq .01$. Note. M=Mean. SD=Standard Deviation. *df* = Degree of Freedom.

Comparison of the Two Groups' Pre-Post Test Mean Scores related to WPT

Two paired-samples t-tests were then conducted to test both groups'performances on the pre-test and the post-test to examine if they improved their performance after the pre-test. The results as presented in Table 6.4 show that both the experimental and control group performed better in their post-test (M =48.23, SD =3.048; M =35.67, SD=4.105) than in their pre-test (M=33.27, SD= 3.051; M=33.30, SD=3.087). There were also significant differences in the two groups 'pre-test and post-test performances t (29) = - 17.802, p=.000; t (29) = -2.527, p=.017.

Table 14: Comparison of Achievement Scores of Students in two Groups related to WPT.

Groups						
Experimental			Control			
M		**SD**	**M**	**SD**	***t***	***df***
Achievement	48.23	3.048	35.67	4.105	-13.463	58

** p ≤.01. Note: M=Mean. SD=Standard Deviation. *df* = Degree of Freedom.

Comparison of Achievement Scores of Students in two Groups related to WPT

In order to determine which group performed better, both groups'achievement scores were subjected to an independent samples t-test. Table 6.5 compares achievement scores and the t- values based on the pre-test and the post-test. The achievement was calculated using the difference between the pre-test and the post-test of the students in the experimental and control groups. Since the Levene's test for equality of variance significance value on the pre-test (.979) is more than 0.05, the equal variance can be assumed.

The average achievement of students in the experimental group was M =48.23, SD= 3.048; and the average achievement of the students in the control group was M = 35.67, SD= 4.102. The t-value between average achievement scores of the two groups was t = -13.463. This shows that the difference between the two groups is statistically significant (p = .000; p <.01). Students in the experimental group reached a significantly higher achievement level compared to those in the control group and showed that multimedia technologies supported writing instructions was more effective than the traditional writing instructions delivered through Blackboard. The effect size (r = .866) indicated that the difference in the scores obtained by the participants in the control and experimental group represents a large and therefore substantive effect.

Discussion and Findings

The above results showed that there are statistically significant differences in the achievement mean scores of the subjects of the experimental group who has been taught effective writing instructions through Multimedia technologies and the control group who studied the same writing instructions using the traditional method. This difference was in favour of the experimental group. A quick look at the students' scores on the pre-test in Table 6.3 shows that there were no statistically significant differences between the mean scores of the experimental group and the control group. The scores were 33.27 and 33.30 for the experimental and the control group respectively. This result indicates that the subjects had the same background in their knowledge of principles of effective writing before implementing the experiment. This also indicates that both groups were equivalent in this regard and any gain in the academic achievement in the field of effective writing could be attributed to the method employed. The total mean scores of the experimental groups in the post-test were 48.23, while it was 35.67 for the control groups. This shows that the achievement in the post-test for both the experimental and control groups is attributed to the treatment. It can be easily noticed that the extra gain in the experimental group's mean scores is higher than the extra gain in the control group's mean scores. This improvement is attributed to the method employed. This means that the use of Multimedia technology has noticeably enhanced the abilities of the students of the experimental group regarding the principles of effective writing.

If we look at the individual sections of WPT, then it indicates that there is a significant improvement in almost all three sections. In the first section (vocabulary), improvement has been found in all the four aspects (Synonym, Antonym, One-Word Substation and Phrasal Verbs) in the experimental group. In the second section related to grammar, significant improvement has been observed in all the four aspects (Voice, Concord, Articles, Prepositions). In the third section of the writing proficiency test related to 'spelling and mechanics of writing'significant improvement has been observed in all the four aspects, i.e. spelling for missing words, homophones, capitalization, and punctuation.

The result of the Writing Proficiency Test (WPT) shows that both the instructional methods helped the learner in improving their performance. However, when the achievement score of both the groups was compared experimental groups, students outperformed control group. One possible explanation for the effect of multimedia technologies on effective writing instructions is that the combination of various media such as text, audio, video,

animation, graphics are effective in enhancing students 'understanding of the subject matter and this motivates them to learn more about it through its interactive multimedia features. We have observed that multimedia technologies are very useful for them to visualize key concepts and enhance their understanding of the subject. These multimedia elements in the module increased their motivation to learn, made their learning fun and kept them actively engaged in their learning. Another possible explanation for the considerable differences in the above findings is that the explanation and presentation applications have a favourable impact on students 'understanding of content and concepts, helped them in recalling the subject during exams, emphasis on important points, and holding student attention during class. It provides a better understanding that can be easily remembered for a longer time.

Findings of Students' Questionnaire Survey:

The findings of the students' questionnaire survey also suggest that the majority of the students have positive perceptions of the use of ICT and Multimedia technologies in English language learning. The students strongly expressed their comfort with the idea of using ICT and Multimedia as English language learning tools and the students also felt that the use of the internet, E-books are most advantageous. The survey data revealed that most of the teachers have no technical knowledge to fix any sort of problems related to either ICT or multimedia related technologies. The YouTube videos and Mp3 audios were reported to help promote teachers' confidence, as well as the use of smart phone and animations for English language learning, proved to be exciting devices. Most of the students are neutral in their opinion to the statement that the use of ICT and multimedia-based tools in learning would scare them. The majority of the students accepted the LCD Projector, video player as valuable instructional tools for English. The students accepted that ICT and multimedia would help teachers to present concepts effectively. Most of the students strongly felt that the multimedia technology supported learning is better than the traditional one. It is also found that both ICT and multimedia assist in
learning language skills better including writing skill.

The students' survey results suggested that the majority of the students seemed to have positive perceptions of the use of ICT and Multimedia Technologies in English language education. They agreed that ICT and multimedia play a great role in language learning according to their own pace, helps in self-understanding and it does not hinder interaction with the instructor. The findings also suggest that ICT and multimedia technology supported language learning help in individual motivation for the students and understanding concepts are also easy.

Findings of Teachers' Questionnaire Survey:

The findings of the teachers' questionnaire survey suggested that the majority of the teachers have a positive attitude towards the use of ICT and multimedia technologies in English language teaching. The teachers strongly expressed their comfort with the idea of using ICT and Multimedia as English language teaching tools. Further, the teacher felt that the use of the internet, E-books are most advantageous. The survey data showed that most of the teachers have no technical knowledge to fix any problems related to either ICT or multimedia related technologies. The YouTube videos, Mp3 audios were reported to help promote teachers' confidence and the use of a smart phone, animations for English language learning proved to be exciting devices. Most of the teachers expressed a neutral opinion to the statement that the use of ICT and multimedia-based tools in learning would scare them. The majority of the teachers accepted the LCD Projector, video player as valuable instructional tools for English. The teachers opined that ICT and multimedia would help them in the presentation of language-related
concepts effectively. Most of the teachers strongly felt that the multimedia technology supported
teaching is better than the traditional one. It is also found that both ICT and multimedia assist well in teaching language skills better including writing skill. The results from the teachers' survey analysis suggested that the majority of the teachers seemed to have positive attitudes towards the use of ICT and Multimedia in teaching English language skills, including writing skill. They agreed that ICT and multimedia supported instruction in technology-enabled writing instruction helps in learning according to their own pace and helps in self-understanding. The use of technology does not hinder interaction with the instructor. The findings also suggested that multimedia supported instructions in teaching the language skills help in paying individual attention to the students and clarifications of doubts are also simple. The teachers, regardless of their gender, age, teaching experience and educational background, had positively perceived self-confidence in using ICT as well as Multimedia technologies in English teaching and learning.

Findings of Writing Proficiency Test:

The findings related to the experiment of Multimedia Technologies Enabled Writing Instruction Programme (MTEWIP) showed significant differences between experimental and control group participants in the study on pre-test / post-test comparisons at the end of intervention programme. The significant gains across all the aspects by the experimental group provided quantitative, empirical support for the pedagogical uses of multimedia technologies-based instruction, and consequent viewing development in the writing skills of the learners. In the Section – A (vocabulary) of writing composition test, improvement has been noticed in all the elements (synonym, antonym, one-word substation, phrasal verbs) in the experimental group. In the Second – B (grammar) significant improvement has been noticed in all four elements (voice, concord, articles, prepositions) related to grammar part of the Section - B. In the Section - C of the writing composition test, improvement has been found in all the four elements of spelling and mechanics of writing (spelling for the missing words, choosing correct homophone, capitalization, and punctuation). There was a significant improvement in all the elements of the test. There could be some reasons for this increase. First, the teaching style is interactive, and the inclusion of multimedia technology supported instructions could be seen as a way of lifting attention spans of the students. The multimedia material was very different in its motivational strength and presentation potentiality compared to the traditional lecture method. Multimedia material contains the most attractive and relevant content where learning of

writing skill is essential hence clarity of written presentation is high.

Findings of Classroom Observations:

The findings of classroom observation show that selected multimedia technologies are so close to language reality-containing visual as well as audible cues along with text and animations. Multimedia technologies increase learners 'motivation. It is a visual stimulus; learners hear authentic language used in context. Its visual aspect facilitates comprehension. It is an instructional medium that generates excitement and it provides practice in writing skill. ICT can be used for learning grammar, vocabulary, punctuation and mechanics of writing. The findings also show that motivational factors associated with ICT-based teaching as well as schema-activating multimedia technology helped to produce this effect. Multimedia material offers background information that activates prior knowledge and schemata, which are essential in stimulating subsequent learning activities related to reading, writing, speaking and listening in the classroom.

Suggestions

This study produced results which were shown to be statistically significant and not significant.However, it must be taken into consideration that these results may be caused by some extraneous factors which were discussed as threats to the validity of the study.

The study continued for twelve weeks. This duration could be extended to one semester in a year and also be incorporated into one of the courses in the department. This would relieve the pressure of time and the other responsibilities of the participants. Moreover, proper attention has not been paid for the development of language features (reporting speech, degrees of comparison, synthesis and analysis of sentences) because of a lack of digital infrastructure, lack of time and workload of participants. Proper attention should be paid for the teaching of language aspects in Multimedia Technologies Enabled Writing Instructions Program (MTEWIP) as they play a prominent role in developing the writing skills of the learners.

Scope for Future Research

The multimedia technology-based learning environment was positively received by students, and further research is underway to investigate the effect of such a learning environment for the students of another discipline to shed lighter on the area. Based on the findings discussed above, the researcher suggests the following recommendations:

There is a need to investigate the effects of specific multimedia applications such as Prezi, Emaze, Explaindio and Techsmith Camtasia on second language learning and other affective domain variables, such as motivation for learning the target language, perception towards the target language. Further research must be conducted to detect the reasons for individual differences, such as the role of cognitive load, visual and acoustic impediments, learning styles of learners, and their L2 proficiency levels which affect the performance of Indian students on the writing skills test.

Future research could include how Prezi and Emaze multimedia presentation tools affect groups such as male/female, high ability/low ability, and different age groups other than the traditional college students. One more factor that this study did not investigate was the complexity of multimedia material preparation. For instance, Emaze presentation preparation and use can be as simple as having only text on a colour screen.

Writing skill instruction and explanations can also be complex with tables, pictures, graphs, sound effects, visual effects, video clips as in Prezi or Explaindio. The effectiveness of Prezi, Emaze and other multimedia presentations may depend on the complexity of the presentation which should be explored further. Future research should also measure learning style and correlate that style with learning performance.

Similarly, more research would be required to establish stronger claims regarding the effectiveness of these multimedia technology-based applications, Prezi and Emaze on short- and long-term memory.

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