Effectiveness of Computer Multimedia for Developing 'Expressional Skills' in English

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Abstract:

The twenty-first century brought in the movements of globalization and liberalization as issues of worldwide interest. A Major challenge before educational planners, administrators, researchers, teachers, and managers of education is thus, providing quality education on international standards. In ELT, computer can play very vital role as it can work with the imagination of students and teachers. Any poetry or story can be presented pictorially by giving different effects which can provide the live effects of words before students. Even the learning that takes place can have longer effect as it directly affects to the senses of students. Moreover, CALL can be used to develop Language Skills. By reviewing related past literature and studies and considering the importance of computer multimedia, the investigator had decided to investigate the effectiveness of computer multimedia strategy for developing Expressional Skills, i.e. Speaking Skill and Writing Skill in English. For the purpose, the investigator carried out this investigation by taking pre decided objectives and hypotheses related to the problem. Two schools from Surat District (one from urban and one from rural area) were selected by incidental sampling method. From those schools, Sample of 240 students were selected and distributed in four groups by random assignment method. 'Solomon Four Group' research design was used in the investigation. The investigator used three types of research instruments, viz. instruments for conducting the experiment, instruments for measuring the effectiveness of the experiment and standardized tests for covariates. The collected data were analyzed statistically by using appropriate statistical techniques viz. correlated t-test, analysis of co-variance, analysis of variance, chi-square by equal probability. At the end of the investigation, the investigator found that the experimental groups did a better performance over control groups on expressional skills' criterion tests as well as Content criterion tests, multimedia animations can be used for teaching and developing Expressional Skills in English irrespective of Gender, Level of IQ of students and Area.

Keywords: *Expressional Skills, Multimedia, Effectiveness*

1. Introduction

The twenty-first century brought in the movements of globalization and liberalization as issues of worldwide interest. A Major challenge before educational planners, administrators, researchers, teachers, and managers of education is thus, providing quality education on international standards. In ELT, computer can play very vital role as it can work with the

imagination of students and teachers. Any poetry or story can be presented pictorially by giving different effects which can provide the live effects of words before students. Even the learning that takes place can have longer effect as it directly affects to the senses of students. Moreover, CALL can be used to develop Language Skills.

Multimedia generally indicated a rich sensory interface between humans and computers or computer- like devices- an interface that in most cases gives the user control over the pace and sequence of the information. With growing and very fast changing information technology, Multimedia has become a crucial part of computer world. Multimedia systems are those computer platforms and software tools that support the interactive uses of text, graphics, animation, audio and motion video. In other words, a computer capable of handling text, graphics, audio, animation and video is called multimedia computer. Today multimedia might be defined as the seamless digital integration of text, graphics, animation, audio, still images and motion video in a way that provides individual users with high levels of control and interaction.

There are four basic language skills, i.e. Listening Skill, Speaking Skill, Reading Skill, and Writing Skill. These skills are fundamental in language learning, especially in a foreign language like English. Among these four language skills, two skills are Expressional (Productive) Skills. The Skill of Speaking is active in nature and productive also. To speak with proper pronunciation is necessary for the right communication. It is an expressional skill, and it is a first basic skill for communication. Speaking includes everything related to speech, i.e. Pronunciation, intonation, stress, rhythm, pitch, tone, style, expression. The Skill of Writing is also productive and active in nature, and it also involves the visuals and psychomotor organs and hence called **"Graphic – Motor Skill"** also. By reviewing related past literature and studies and considering the importance of computer multimedia, the investigator carried out her investigation on **"Effectiveness of Computer Multimedia for developing Expressional Skills in English ".**

2. Rationale of the Study

Technology based learning is the need of today's world. It affects each and every domain of man's life therefore. So many researches and project works have been done in this area. Apart from these, so many articles have been published in different margarines which raised the issues related to new technology, multimedia, etc. Here, the investigator reviewed Ya Hua Chen (2004), Acharya (2007), Kimura (2006), Liu (2007), Kaltenboeck (2007), Abuseileck Plakans, L. (July 2008), Dhaka, M. (2008), where she had found out the fact that Information Techonology an Computers have enriched the teaching-learning process. The studies of Abraham B. (3rd July, 2008), Abuseileck, A.F. (5th Dec, 2008), Kessler G. & Plakans, L. (3rd July, 2008) proved that CALL (computer assisted language learning) is more advantageous to both students and teachers. It allows the teachers to give attention to an individual student being a facilitator and the student proceeds according to his/her own pace. Ya Hua Chen (2004), the investigator concluded that computer-mediated communication tools can benefit for learning and developing communication skills into learners. The same observation was found in the article written by Acharya (2004). According to him, ICT (Information and Communication Technology) in English language learning is very useful and have great effect on the teachers' mind. It shows that CALL has been positively effective in the process of teaching and learning of a language.

The studies conducted by Iheanacho (1997), Zyoud (1999), Yadav (2004), Wevendra-Kumar (2005), Badiyani (2005), Dipsingh (2007), Rathod (2008) were related with English language teaching along with the use of computer. They also support the previous related literature reviews. The investigator could find that most of the studies were based on the teaching of English, they were either of the University Students or of early stage of child education. In

addition most of the studies also show that CALL and multimedia programme proved to be effective even in science teaching and various aspect of English language. But as per her knowledge, she couldn't find a single study done in the area of Language Skills development through multimediated CALL programme.

Apart from these, the investigator reviewed various past studies related to teaching various aspects of English through different methods and ultimately she came to conclusion that in the sphere of teaching and learning of foreign language, i.e. English, quite a number of methods and approaches are available. By reviewing Kumar (1990), Sharma (1996), Acharya (2005), Hsu (1999), Das A. (2005), Sakhiya (2006) the investigator came to know the fact that language games and self-learning materials proved to be effective for learning different aspect of English language. But she couldn't find single study related with multimedia approach to learn and develop English language skills.

The investigator also observed previous studies of Subramuniam (1981), Makwana (1991), Joshi (1992), Almasy (1992), Pasty ALLENE (1997), Danikhel (1998), Kashy (2001), Sukhaiya (2004) which were regarding with English language skills. By reviewing these studies, the investigator found that Makwana (1991), Joshi (1992), Almasy (1992), Antonisamy (1999)   did their investigations in the area of writing skill whereas, Grannis (1993), Pasty ALLENE (1997), Danikhel (1998), Kashy (2001) did their investigations in the area of reading skill whereas Subramaniam (1981) and Sukhadia (2004) did studies on All four language skills. The present investigation is identical to Subrahmaniam and Sukhadia in the selection of Language skills as the investigator selected all four language skills. In the case of tools Makwana (1991) used diagnostic test to diagnose the students' weakness in the English writing, Danikhel (1998) used Reading Comprehension and Reading Vocabulary test which was developed by him and he also used standardized tools to assess study habit Academic Achievement Motivation, Intelligence personality, Whereas Kashy (2001) used Reading Readings Test (RRT), Picture Story Telling Test (PSTT), Reading Test (RT), Attitude scale for teachers and interview schedule for parents. And as far as the present investigation is concerned, the investigator used two standardized tools, i.e. K.G.Desai Verbal – Nonverbal Intelligence Test to measure students' intelligence and 'Adhyayan Shailly Sansodhini' to measure students' Learning style. Apart from these, the investigator used self-made tools for assessing Speaking and Writing skill. Opinionnaire and Students' Dairy made and used to collect the opinions of students regarding experiment. Thus the present investigation was somewhat identical and somewhat different from the past studies.

If we reviewed past studies, we came to conclude that in the matter of research design, the present investigation is different. Joshi (1992) employed quasi-experimental design namely, "Three equal group design" even Kashy (2001) also employed the same. Sukhadiya (2004) employed single group pretest-posttest design. Whereas the investigator decided to use "Solomon Four group" design for the present investigation, which is different from the other studies.

The related previous studies also present that multimedia technology gives new opportunities in teaching-learning process as well as activities that may not be experienced by traditional teaching method. The investigator reviewed several studies done in the field of multimedia technology but she couldn't find single study that was related with the use of multimedia for developing Language Skills in English. Keeping in mind all the above presented discussions, the investigator finally came to conclusion to take up such a topic for research which can be beneficial for learning of a language as a whole and language skill as particular. And she made up her mind to work on the topic as presented in the following section.

3. Objectives of the Study

1. To find the significant difference between the mean scores of achievement in Expressional Skills Criterion Tests at pretest and posttest stages of the students of Experimental Group-I.
2. To find the significant difference between the mean scores of achievement in Content Criterion Tests at pretest and posttest stages of the students of Experimental Group-I.
3. To find the significant difference between the adjusted mean achievement scores of Experimental Group-I and Control Group-I on Expressional Skills Criterion Tests by taking IQ score, Pretest Achievement Scores and Learning Style as Covariates.
4. To find the significant difference between the adjusted mean achievement scores of Experimental Group-I and Control Group-I on Content Criterion Tests by taking IQ score, Pretest Achievement Scores and Learning Style as Covariates.
5. To find the significant difference between the adjusted mean achievement scores of Experimental Group-II and Control Group-II on Expressional Skills Criterion Tests by taking IQ score and Learning Style as Covariates.
6. To find the significant difference between the adjusted mean achievement scores of Experimental Group-II and Control Group-II on Content Criterion Tests by taking IQ score and Learning Style as Covariates.
7. To find the significant difference between the adjusted mean achievement scores of Experimental Group-I, Experimental Group-II, Control Group-I and Control Group-II and on Expressional Skills Criterion Tests by taking IQ scores and learning style scores as covariates.
8. To find the main effects of Treatment, Pretest, Gender, Area and Level of IQ on the adjusted mean achievement scores of students on Content Criterion Tests by taking IQ scores and Learning Style as Covariates.
9. To compare between the mean achievements scores of students of all four groups of Standard-VIII for Expressional Skills on the basis of Observation Schedules.
10. To study the opinions of Experimental Groups regarding the experiment for developing Expressional skills in English.

4. Hypotheses

1. There is no significant difference between the mean scores of achievement in Expressional Skills Criterion Tests at pretest and posttest stages of the students of Experimental Group-I.
2. There is no significant difference between the mean scores of achievement in Content Criterion Tests at pretest and posttest stages of the students of Experimental Group-I.
3. There is no significant difference between the adjusted mean achievement scores of Experimental Group-I and Control Group-I on Expressional Skills Criterion Tests by taking IQ score, Pretest Achievement Scores and Learning Style as Covariates.
4. There is no significant difference between the adjusted mean achievement scores of Experimental Group-I and Control Group-I on Content Criterion Tests by taking IQ score, Pretest Achievement Scores and Learning Style as Covariates.
5. There is no significant difference between the adjusted mean achievement scores of Experimental Group-II and Control Group-II on Expressional Skills Criterion Tests by taking IQ score and Learning Style as Covariates.
6. There is no significant difference between the adjusted mean achievement scores of Experimental Group-II and Control Group-II on Content Criterion Tests by taking IQ score and Learning Style as Covariates.
7. There is no significant difference between the adjusted mean achievement scores of Experimental Group-I , Experimental Group-II, Control Group-I and Control Group-II on Expressional Skills Criterion Tests by taking IQ scores and Learning Style as Covariates.

8. There is no significant main effect of Treatment, pretest, gender, area and level of IQ on the adjusted mean achievement scores of students on Content Criterion Tests by taking IQ score and Learning Style as Covariates.
9. There is no significant difference between the mean achievements scores of students of all four groups of Standard-VIII for Expressional Skills on the basis of Observation Schedules.

5. Population and Sample Selection Procedure

In the present investigation, the investigator wanted to know the effectiveness of Computer Multimedia for developing expressional skills in English in the students of Standard-VIII studying in Gujarati medium schools of Surat District. Therefore all the students of Standard-VIII of Gujarati medium schools of Surat District were the population for the present investigation.

For the present investigation, selection of schools from Surat district was done by incidental sampling method, out of which one was from Urban and one was from rural area. From each school 120 students were selected randomly and were distributed in four groups of thirty each by random assignment method, to fulfill the requirement of Solomon Four Group Design. Thus the total sample of 240 students for the final experiment. Total sample for final experiment is presented in table 1 as presented below:

Table 1
Details of Sample for Field Experiment

No.	Place of Experiment	Standard	E_1*		E_2*		C_1*		C_2*		Total
			G*	B*	G*	B*	G*	B*	G*	B*	
1.	School from Surat City Precidency School, Rander	VIII	14	16	13	17	16	14	14	16	120
2.	School from Rural Area Sanjivani Vidhyalaya, Hazira	VIII	13	17	14	16	16	14	16	14	120
	Total		27	33	27	33	32	28	30	30	240

E_1 - Experimental Group-I $\quad\quad$ E_2 - Experimental Group-II
C_1 - Control Group-I $\quad\quad\quad\quad$ C_2 - Control Group-II
G - Girls $\quad\quad\quad\quad\quad\quad\quad\quad\quad$ B - Boys

6. Research Design

Solomon Four Group Experimental Design was applied for the present investigation. In the Solomon Four Group Design, there is a possibility of comparing groups with pretest and without pretest and at the same time, it is a kind of a design having highest level of internal and external validity.

Solomon Four Group Design

O_1	C_1	O_2
O_3	E_1	O_4
	C_2	O_5
	E_2	O_6

C_1 and C_2 –Control Groups
E_1 and E_2 –Experimental Groups
O_1 and O_3 – Pretest
O_2, O_4, O_5, O_6 – Posttest

7. Research Instruments

For the data collection, the investigator used three types of research instruments which are mentioned below:

(i) Instruments for conducting the experiment,
(ii) Instruments for measuring the effectiveness of the experiment,
(iii) Standardized Tests.

8. Instruments for conducting the experiment

The Investigator had selected some stories, comprehensions and poems from the old textbook of English of Standard-VIII of Gujarati medium school of Gujarat board and prepared Multimediated Animation Programme on them for conducting the experiment. The investigator decided to teach Expressional Skills of English through multimediated stories, comprehensions and poems.

8.1 Instruments for measuring the effectiveness of the experiment

(i) Expressional Skills Criterion Tests for each skill
(ii) Content Criterion Tests for each unit
(iii) Observation Schedules for each skill
(iv) Opinionnaire
(v) Students' Diary

8.2 Standardized tools for measuring Covariates

(i) K.G Desai Verbal- Non –Verbal Intelligence test for IQ measurement
(ii) Adhyayan Shailly Sanshodhanika for measuring Learning Style

9. Scheme of Analysis

For testing the hypotheses, the collected data were analyzed statistically using the selected statistical techniques, viz. correlated t-value, Analysis of Co-variance, analysis of variance, chi-square by equal probability statistical techniques. To analyze the opinions of students gathered on Students' Dairy was analyzed by qualitative method of pattern development.

10. Findings

1. The correlated t-values for pretest and posttest of Experimental Group-I on Speaking Skill and Writing Skill and Content Criterion Tests are highly significant at 0.01 level of significance for Urban, Rural and Urban-Rural (Overall) areas, which indicates that there is a good effect of Computer Multimedia on students of Experimental Group-I of all areas. And students can very well develop the Expressional Skills through Computer Multimedia as well as the contents of all units.

2. By taking pretest scores, IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Expressional Skills Criterion Tests and Content Criterion Tests of Urban, Rural and Urban-Rural (overall) areas are highly significant at 0.01 level of significance. The result shows that there is a significant difference between the groups of the students on Speaking Skill and Writing Skill. By comparing the adjusted means of the posttest of Experimental Group-I and Control Group-I, it is found that Experimental Group-I has shown a better performance over Control Group-I. It means that the students of Experimental Group-I of Urban Rural and Urban-Rural (overall) areas have developed Speaking and Writing Skills better than Control Group-I.

3. By taking pretest scores, IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Expressional Skills Criterion Tests and Content Criterion Tests of Urban, Rural and Urban-Rural (overall) areas are highly significant at 0.01 level of

significance. The result shows that there is a significant difference between the groups of the students on Speaking Skill and Writing Skill. By comparing the adjusted means of the posttest of Experimental Group-II and Control Group-II, it is found that Experimental Group-II has shown a better performance over Control Group-II. It means that the students of Experimental Group-II of Urban Rural and Urban-Rural (overall) areas have developed Speaking and Writing Skills better than Control Group-II.

4. By taking IQ scores and learning style scores as covariates, F-value calculated by analysis of covariance for Expressional Skills Criterion Tests and Content Criterion Tests of Urban, Rural and Urban-Rural (Overall) areas are highly significant at 0.01 level of significance. The results show that there is a significant difference among the groups of the students on Expressional Skills' tests and Content Criterion Tests. By comparing the adjusted means of the posttest of Experimental Group-I, Experimental Group-II, Control Group-I and Control Group-II of all areas, it is found that Experimental Group-I and Experimental Group-II of all areas have shown a better performance over Control Group-I and Control Group-II. It means that the students of Experimental Group-I and Experimental Group-II of all areas have developed Expressional Skills better than Control Group-I and Control Group-II.

5. Computer Multimedia can be used for teaching Language Skills in English irrespective of Gender of the students, i.e. these multimedia animations are equally effective for both girls and boys, Area, i.e. these multimedia animations are equally effective for both Urban and Rural area, irrespective of Level of IQ, i.e. these multimedia animations are equally effective for the students of Higher, Medium and Lower level of IQ.

6. Analysis of variance for Language Skills of Experimental Groups on the basis of Observation Schedule of Urban, Rural and Urban-Rural (Overall) areas are not significant at 0.01 level of significance. The results show that there is no significant difference among the experimental groups of the students on observation schedule. It means that (computer) multimedia is equally effective for both groups, i.e. Experimental Group-I and Experimental Group-II.

7. Analysis of variance for Expressional Skills of all four groups on the basis of Observation Schedule of Urban, Rural and Urban-Rural (overall) areas are highly significant at 0.01 level of significance. The results show that there is a significant difference among the groups of the students on observation schedule. By comparing the scores of Experimental Group-I, Experimental Group-II, Control Group-I and Control Group-II of all areas, it is found that Experimental Group-I and Experimental Group-II of all areas have shown a better performance over Control Group-I and Control Group-II. It means that the students of Experimental Group-I and Experimental Group-II of all areas have developed Expressional Skills better than Control Group-I and Control Group-II.

8. The chi square of all statements of Opinionnaire of Urban and Rural Area are significant at 0.01 level, which shows that received opinions were real not incidental. There is a significant different between expected frequency and observed frequency.

11. Conclusion

Education is the process of evolvements of knowledge, skills and attitude for the all round development of physical, intellectual and spiritual faculties of an individual. The various advanced technological media have a great potential to help this evolvement process. The ultimate goal of any educational research is to make education fit to the recipients. The present investigation found out that students through the computer multimedia performed far better than the students taught through the traditional teaching method. Besides, it was also found that for both the girls and boys and students of higher, medium and lower level of IQs, the multimediated stories are equally effective. The strategy of multimedia packages help the learner in learning well, as they have the potentiality to motivate, to reinforce, to inform, to guide, to assist, to enhance retention, etc. Hence, the present investigation is an eye opener and torch bearer for

teachers, educations, planners and policy maker of Indian Education system to get immense insight into the use of multimedia in schools as a new teaching strategy and its benefits especially for both teachers and learners, and for society as a whole.

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