Developing Written English through Multimedia for Slow Learners – an Experiment at Engineering College Level

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Abstract

In this study the investigators tried to improve the written ability of the students, particularly the slow learners, who find it difficult when it comes to writing any text. Single group, pretest, posttest design was adopted after identifying the slow learners. A multimedia package was designed by the investigators and the sample was trained using the self learning multimedia package. The posttest scores of the samples were improved remarkably than the pretest and the progressive test scores, establishing the effect of the multimedia package. 45 students were taken for the study pertaining to four disciplines. The tool used for this study was Test of General Intelligence Tool (TGI Tool) for identifying the slow learners, a diagnostic test, achievement tests and attitude scale. For analysis of data, mean, SD, percentage of errors, t-test, Karl Pearson product moment correlation and Annova were used. The achievement scores of the posttest was greater than the pretest scores as well as the post attitude score was also considerably greater than the scores in the pre attitude, confirming the effectiveness of multimedia self learning package. The gap closure in the achievement was 41.69 percentage and in the attitude was 17.7 percentage, proving that the teaching via multimedia self learning package was more effective in developing written English.

Keywords: Slow Learners, Writing Skill, Multimedia Self Learning Package

1. Introduction

Just as "necessity is the mother of invention", today English has become a necessary tool and a powerful mode of communication. It is a mode through which a message is passed from one person to another. Slow learners can understand English to some extent, but when it comes to written and the spoken forms in communication, they let it slip and find it difficult. They struggle to frame a few sentences in a coherent manner. The mistake, here is not only in the teaching process but also in the mental caliber of the students. The mental caliber here, denotes the understanding capacity of the students over the subject. The students must not only speak in English but also start to think in English. Once one starts thinking in English, then automatically the vocabulary will also start improving. When an error is committed, it should be rectified then and there. Most of the people feel shy to speak in English in public. The reason is about the other people's criticism and comments. One must accept the criticism openly and in a positive manner and later correct them. The students coming from the rural area shun away from using English language because they feel in their heart of hearts, that English is a difficult subject. Moreover they are not prepared to learn it by facing the usual and initial hardships and overcoming the challenges. Such people do not speak freely, openly and confidently. The general notion among students is that grammar is very difficult and tough to learn. It needs a lot of practice. But with the help of a remedial package in a multimedia form, it can attract and draw the attention of the students. This new form will indeed kindle the student's interest to learn more. It can also be fun in learning new concepts and understanding the unknown.

1.1 Rationalisation of the Study

Here the investigators are giving some researches related to developing written English through multimedia which is given below:

Shinde (1998) attempted to find out the effectiveness of teaching grammar through computer assisted packages. The result of his study revealed that comparing to the traditional methods the computer assisted instruction packages were more effective in teaching English grammar and positive opinion was shown and such packages were very useful to the students. Lundgren, Carol A. (1985) conducted a research titled in comparison of the effects of programmed instruction and computer assisted instruction on achievement in English grammar. There was a significant difference in achievement which favoured this computer assisted method. Clark, Margaret M. (1986) studied on educational technology and children with moderate learning difficulties and relates these characteristics to features of educational technology and lists strengths and weakness of computer assisted learning.

Horton, Stephen V (1988) studied on teaching Geography to High School students with academic defects and effects of a computerised map tutorial. Computerised map tutorial and a more traditional atlas based instructional method to teach geographic locations were compared and the first method produced significantly higher performance. Watson, Daniel L and Rangel, Lyle (1989) advocated cooperative learning as an effective tool for reaching slow learners, by bridging the gaps between the learning styles of slow learners and the teaching requirements of the classroom. This resulted in improved academic performance for both slow learners and high achievers. Lin, Antonia Hsiu-Chen (2001) studied on multimedia integration in English poetry teaching. Multiple intelligences are integrated into this process. Teachers and students use multimedia materials in many ways to teach and learn poetry. They also communicate with other readers via an online discussion board.

From the review of the above and other studies, the investigator has conceived a problem on the slow learners in written English and effective application of multimedia self learning package in improving their writing skills.

1.2 Statement of the Problem

The statement of the problem is "Developing Written English through Multimedia for Slow Learners – an Experiment at Engineering College Level."

1.3 Objectives of the Study

The following are the objectives of the study:

- To identify the slow learners and errors committed by them in written English at the Engineering College level.
- To categorise the errors committed by the slow learners.
- To develop a remedial self-learning package.
- To administer the self-learning package to the slow learners with a view to reducing their errors.
- To identify the effectiveness of the remedial self-learning package in reducing the errors.
- To identify the attitude of the students towards English in general.

1.4 Hypotheses of the Study

The following were the hypotheses which were formulated to give specific directions to the study:

a)   *General Hypothesis:*

Remedial self-learning multimedia package proves more effective in minimising the errors committed by slow learners in English at the Engineering College level.

b)   *Specific Hypotheses:*

- The experimental group achieves significantly better in the posttest than in the pretest.
- The mean scores of the experimental group in the progressive test are significantly greater than its mean scores in the pretest.
- The mean scores of the experimental group in the posttest are significantly greater than its mean scores in the progressive test.

- There exists significant difference between the retention test scores and the posttest scores of the experimental group.
- The experimental group commits significantly less number of errors in the posttest than in the pretest.
- The errors committed by the experimental group in the progressive test are significantly less than their errors in the pretest.
- The errors committed by the experimental group in the posttest are significantly less than its errors in the progressive test.
- There exists significant difference among the experimental groups (CSE, IT, CIVIL and MECHATRONICS) in their posttest achievement scores.
- The post-attitude scores of the experimental subjects towards English are greater than their pre-attitude scores.

1.5 Delimitation of the Study

The study is delimited to the following aspects:

- The investigator confined the study to the K. S. Rangasamy College of Technology, Tiruchengode, Tamilnadu.
- The study was conducted on the B.E. / B.Tech. first year students in K. S. Rangasamy College of Technology, Tiruchengode, Tamilnadu.
- The study was conducted on the students of Computer Science Engineering, Information Technology, Civil Engineering and Mechatronics Engineering only.
- The study was conducted in the classroom and the language laboratory.
- The investigator prepared the multimedia self-learning package pertaining to four areas of English grammar namely, Articles, Prepositions, Voices and Tenses.

The self-learning package was administered for four weeks during the working hours only.

2. Research Strategy of the Study

The research strategy was so premeditated as to realize the stated objectives of the study. As the present study was experimental in nature, experimental method was necessary to attain the objectives. To fulfill the first, the second and the third objectives, content analysis was preferred. For fulfilling the fourth, the fifth and the sixth objectives, experimental method was preferred.

2.1 Population of the Study

The population of the study was the first year students of Bachelor of Engineering Colleges of Tamil Nadu.

2.2 Sample and Sampling Technique

For this study a sample of forty-five students from the first year students of Bachelor of Engineering of Technology was selected by random sampling technique after identification of slow learners. The selected sample is shown in the table 1.

2.3 Tools Used

The following tools were used for the study:

- Test of General Intelligence Tool (TGI Tool) for identifying the slow learners (Borrowed).
- A diagnostic test to identify the errors committed by the samples in written English (Constructed).
- Achievement tests to understand the performance of the students before and after the treatment, the validation of this tool was established through experts' opinion. The reliability of this tool was

verified by test-retest method, and the correlation coefficient was calculated and found to be 0.99 and 0.80, showing high reliability of the tools constructed.

- Attitude scale to find out the attitude of the treatment group towards learning English before and after the treatment. On the basis of the recommendations of the jury council, the attitude items were properly structured by eliminating ambiguous and overlapping items, proving the content validity. For the reliability of the attitude scale Split-Half method was followed and the Pearsons Product Moment Correlation was found to be, r = 0.67 and the reliability coefficient was 0.8, by the Spearman-Browns formula.

3.   Data Collection and Statistical Treatment

Test of general intelligence was administered to identify the slow learners. A diagnostic test was conducted to identify and categorise the errors committed by the samples in written English. Pre-attitude scale was conducted to find out the attitude of the treatment group towards learning English before the treatment. Pretest (Achievement test-1) was conducted to identify the entry level of slow learners, for duration of two hours. Application of the developed multimedia self-learning package was done for a period of one month during the class hours. Progressive test (Achievement test-1) was conducted during the application of multimedia self-learning package for duration of two hours. Posttest (Achievement test-2) was conducted after the treatment for duration of two hours. Post-attitude was conducted after the treatment. Retention test (Achievement test-2) was conducted one month after the application of multimedia self-learning package.

For statistical treatment, Mean and Standard Deviation were computed for the pretest, the progressive test, the posttest and the retention test scores. Percentages of error were struck for the pretest, the progressive test, the posttest and the retention test. 't' test was applied to find out the significant difference among the pretest, the progressive test, the posttest and the retention test scores. Pearson's Product Moment Correlation Coefficient was computed between the pretest, the progressive test, the posttest and the retention test scores of the correlated groups. Two way ANNOVA was calculated to find out the interaction effect among variables. Gap Closure Percentage was struck for both global and various branches in achievement and attitude.

4.   Analysis and Discussion

The mean scores of pretest, progressive test, posttest and retention test were displayed in table 2. The mean scores of the experimental group in pretest, progressive test, posttest and retention test were gradually increasing from 38.6 to 67.3, establishing the improvement of the sample in written English.

The error percentage for the experimental group in various tests were noted as 86.7%, 62.2% and 26.7%, proving the percentage was decreasing gradually. This result is presented in table 3. The summary of two way Annova reveals that there exist no significant difference among the students of the four branches namely, Computer Science, Information Technology and Mechatronics. This result is tabulated in table 4. The 't' test of pre-attitude and post-attitude is shown in table 5, which shows that the post-attitude scores of the experimental subjects were significantly greater than their pre-attitude scores. The gap closure percentages in achievement test and attitude scale are shown in the tables 6 and 7. The gap closure percentages were uniform for four branches.

5.   Finding of the Study

The following is the summary of major findings of the study:

- The posttest scores of the experimental subjects are significantly greater than their pretest scores.
- The progressive test scores of the experimental subjects are significantly greater than their pretest scores.
- The posttest scores of the experimental subjects are significantly greater than their progressive test scores.

- The retention test scores of the experimental subjects are significantly greater than their posttest scores.
- The errors committed by the experimental group in the posttest are significantly less than its errors committed in the pretest.
- The errors committed by the experimental group in the progressive test are significantly less than its errors committed in the pretest.
- The errors committed by the experimental group in the posttest are significantly less than its errors committed in the progressive test.
- In the posttest scores of the experimental group, there is no significant difference among the students of the four branches – Computer Science Engineering, Information Technology, Civil Engineering and Mechatronics Engineering.
- The post-attitude scores of the experimental subjects are significantly greater than their pre-attitude scores.

6. Research Implication

The findings of the study imply the following:

The most important finding of the present research is that the posttest performance of the experimental subjects is significantly greater than their pretest performance.

Further the performance in the retention test is still greater than their posttest performance of the treatment subjects. In other words, the administration of the multimedia self-learning package was effective in helping the students of the experimental group to perform better in the posttest as well as the retention test. This proves the effectiveness of the multimedia self-learning package in English grammar developed by the investigator.

The errors committed by the experimental group in the posttest are significantly less than the errors committed in the pretest. The errors committed by the experimental group in the progressive test are significantly less than their errors committed in the pretest. The errors committed by the experimental group in the posttest are significantly less than their errors committed in the progressive test. These findings show that by practising more exercises through the multimedia package, the errors committed by the slow learners in written English can be reduced considerably.

The sample being the slow learners, the gap closure percentage for the experimental global group is 41.6%, which implies that self-learning multimedia package is effective. From this study, it was observed that the application of the multimedia package had influenced over the sample and improved their written performance in written English.

7. Conclusion

Teachers should encourage their students to write by providing helpful criticisms and not the damaging ones. They should make constructive criticisms of their students‟ work. Over-insistence on „correctness‟ hinders the learning process. The right attitude of the teacher is important for students who are grappling with the complexities of English grammar, vocabulary and pronunciation. The language is difficult enough; let not the teachers make it more difficult for the learners. The majority of teachers of English are non-native speakers. English is not their first language. Consequently, there is a likelihood of students going wrong in some aspects of the English language. In order to upgrade teachers professionally as good models of the language taught, teachers have to try to adopt the native speaker's competence. Students should emulate the way the language is to be used.

Not only do students need more exposure to the language, but teachers too need to be well-exposed. They need to keep themselves abreast of the current issues by reading books and journals related to their profession. Unless teachers take a more professional interest in their work, they may lag behind their more professional counterparts in the domain of the English language teaching.

Teachers should advise the students to listen to good English from the sources like, radio, television, native speakers and good local speakers of the language. They should listen for correct pronunciation. They must

also be encouraged to speak in English with their peer groups and create an atmosphere in class that is conducive to learning the language.

The importance of inculcating the reading habit among the students must be stressed by the teachers. As Francis Bacon (1561-1626) rightly pointed out that, "reading maketh a full man." reading helps us to learn the correct spelling, enrich their vocabulary and internalize acceptable and appropriate sentence constructions. Multimedia self-learning package will instill confidence and give more responsibility to the students. Repeated and regular practice is the success of effective writing in English.

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Tables

Table 1. Distribution of Sample

S. No.	Branches	Number of Students
1	Computer Science Engineering (CSE)	15
2	Information Technology (IT)	10
3	Civil Engineering (CIVIL)	10
4	Mechatronics Engineering (MCT)	10
Total		45

Table 2. Pre, Progressive, Post and Retention Test Scores of the Experimental Groups

S. No.	Group	N	Mean Scores			
			Pretest	Progressive Test	Posttest	Retention Test
1	Experimental (Global)	45	38.6	55.4	64.2	67.3
2	Experimental(CSE)	15	35.53	55.6	63.27	64.4
3	Experimental(IT)	10	38.4	56.7	65.6	68.2
4	Experimental (CIVIL)	10	35.6	49.9	58.6	62.8
5	Experimental (MCT)	10	46.5	59.1	69.9	67.6

Table 3. Error Percentages in Various Tests

Test	Errors Committed	% of Error
Pretest	39	86.7
Progressive Test	28	62.2
Posttest	12	26.7

Table 4. Difference in the Posttest scores for the various Branches

(CSE, IT, CIVIL and MCT)

Sources of Variances	ss	df	MS	F
Between Groups	617.15	3	223.72	
Within Group	3790.63	41	92.45	2.42
Total	4407.78	44	316.17	

Table 5. Difference between the Pre-Attitude and the Post-Attitude Scores

N = 45

Test	Mean	S.D.	r	t
Pre-Attitude	77.4	7.943	0.768	5.205*
Post-Attitude	81.4	6.937		

* Significant at 0.01 level

Table 6. Gap Closure Percentage for the Experimental Group in Achievement

Group		Pretest Mean	Posttest Mean	Gap Closure %
Experimental	Global	38.6	64.2	41.69
	CSE	35.53	63.27	43.04
	IT	38.4	65.6	44.16
	CIVIL	35.6	58.6	35.71
	MCT	46.5	69.9	43.74

Table 7. Gap Closure Percentage for the Experimental Group in Attitude

Group		Pre-Attitude	Post-Attitude	Gap Closure %
Experimental	Global	77.4	81.4	17.7
	CSE	77.2	81.6	19.3
	IT	77.3	81.3	17.62
	CIVIL	75.2	78.5	13.31
	MCT	80.0	84.1	20.5