"Impact of Branching programmed learning material in english grammar at PU level"

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Abstract:

From the last decades new methods and techniques in education are having an increasing effect on the traditional teaching and learning. Among the new approaches and innovations that have gained importance in recent years is programmed instruction. The purpose of programmed instruction is to manage learning under controlled conditions. Many of the research studies also found that learning and understanding is significantly increasing with the help of programmed instruction. Branching programming is one of the major types of programmed instruction. The main objective of the study was to find out the impact of branching programmed learning material in English grammar at PU level and also to study the difference between the control and experimental group in their learning outcomes. In address to this, the researcher administered pre and post test for 120 students from N.V PU college. The data were obtained and statistically analyzed with appropriate technique. The major findings revealed that branching programmed learning material has positive impact on students learning and there is significant difference in science, arts and commerce students' achievement. Therefore more number of students can be motivated to learn through learning material in ease and effective manner.

Keywords: Branching programme, learning material, impact, English grammar and PU level

Introduction:

Programmed instruction, method of presenting new subject matter to students in a graded sequence of controlled steps. Students work through the programmed material by themselves at their own speed and after each step test their comprehension by answering an examination question or filling in a diagram. They are then immediately shown the correct answer or given additional information. Programmed learning material which both tests students' abilities and marks their progress, may supplement classroom activity or help students to develop ideas and skills independently. Programmed instruction is a systematic, step by step, self instructional programme aimed to ensure the learning of the stated behavior. It is thought as the way of "growing" or improving instruction. It places the learner at the centre where he himself constructs knowledge rather than passively absorbing it. An individual's knowledge is a function

of one's prior experiences, mental structures, and beliefs that are used to interpret objects and events. Hence branching programmed learning material is developed for the attainment of the subject matter.

Need and significance of the study:

The main intention of the programmer is to bring remarkable change in teaching-learning process with the help of branching programmed learning material. It is to be noted that the material is developed based on the needs and capacities of the learner. In which he is freed to move further at his own pace. This type of programmed material provides immediate confirmation to the correct answer and given the reason in addition to it if his answer is incorrect. Hence in a programme of this type, all learners do not follow the same path and they branch. Crowder points out that branching programmed material is like a human tutor and 'talks back' to the student. Thus the researcher tried to implement a new learning strategies that can help them to concentrate on just what they do, when they learn.

Review of related literature:

Ali Pannah (2015): this study aims at investigating the possible effect of computer programs on improving EFL learners' grammatical knowledge through essay writing. The results of the study revealed that the superiority of the experimental group in having fewer grammatical errors/mistakes in writing. **Singaravelu** (2014): The study enlightens the impact of gadget based learning of English grammar at standard II. The researcher tried to identify the learning problems of the students and to find whether there is any significant difference in achievement mean score between pre test of control group and post test is control group in learning. It reveals that the conventional method of teaching is not effective in learning English grammar at standard II. The main educational implication is that it can be implemented to all other schools. **Hirakumar** (2014): this study aims to develop computer assisted instruction on English grammar for standard IX students, to study the effectiveness of the CAI in terms of achievement of IX students on English grammar. The result shows that the use of multimedia package found effective in terms of achievement of the learners and their reactions. **A Rajayokayam** (2012): the researcher tried to identify the extent of achievement in English grammar of the students of XI and XII. The study reveals that the CAIM was more effective than the traditional method in teaching of English grammar at higher secondary school. Thus the related literature motivated the researcher to take up a study on branching programmed learning material in English grammar at higher secondary level.

Operational terms defined:

1. **Impact**: means have a strong effect or influence on someone or something. Measure of the tangible and intangible effects (consequences) of one things or entity's action or influence upon another. In general the effect of action or thing on another. In this study the investigator measures the impact or effect of treatment of branching programming on learning outcome.

2. **Branching programmed**: Branching program may be produced for use on a teaching machine or in a book form. It is also known as intrinsic programming. It is not controlled

extrinsically by the programmer. The branching programming also functions as a tutorial strategy.

3. **Learning material**: are the materials used to assist students to meet the expectations for learning. The researcher has developed learning material to help students in learning.

4. **English grammar**: "Grammar is the sound, structure, and meaning system of language. All languages have grammar, and each language has its own grammar" (Beverly, 2007, p.1). People who speak the same language are able to communicate with each other because they all know the grammar system and structure of that language, that is, the meaningful rules of grammar.

5. **PU level:** Pre University Course, popularly known as PUC is an intermediate course (which is known as 10+2) of duration two years conducted by state education institutions or boards in India. Generally three streams of studies are followed, Art, Commerce and Science. This Pre-University Course (PUC)is also known as PDC (Pre Degree Course), + 2or Intermediate course.

Objectives:

1. To study the impact of branching programmed learning material in English grammar.
2. To find out the impact of branching programmed learning material on academics of PU science, arts and commerce students.
3. To find out the difference between gender and learning outcome of branching programmed learning material.
4. To find out the difference between post test and delayed post test in learning outcome of science, arts and commerce students.

Hypotheses:

1. There is a significant difference between mean scores of pre test and post test of control and experimental group.
2. There is a significant difference between mean scores of post test and gender.
3. There is a significant difference between post test scores of science, arts and commerce.
4. There is a significant difference between post test and delayed post test scores of science, arts and commerce.

Research methodology:

Sample size and technique: for the present study the researcher has adopted simple random sampling and selected 120 students from Nutan Vidyalaya P.U composite college of Science, Arts and Commerce, Kalaburagi city.

Method and tool: The present study is experimental in nature. The investigator has developed learning material which was an effective tool used in the study. Self-constructed reaction scale was also used.

Research design: Pre test, post test and delayed post test for experimental and control group design was employed for the written test.

**Statistical technique**: the researcher adopted Mean, S.D, t test.

Analysis and interpretation: collected data were analyzed and interpreted accordingly.

H_0: There is no significant difference between pre test and post test scores of control group.

H_1: There is a significant difference between pre test and post test scores of control group.

Table 1: Calculated values of pre test and post test scores of control group

|	N	Mean	SD	"t" value	df	Sig.(2-tailed)
Pre test	60	61.97	4.510	6.964	59	0.000 *
Post test	60	64.03	4.206			
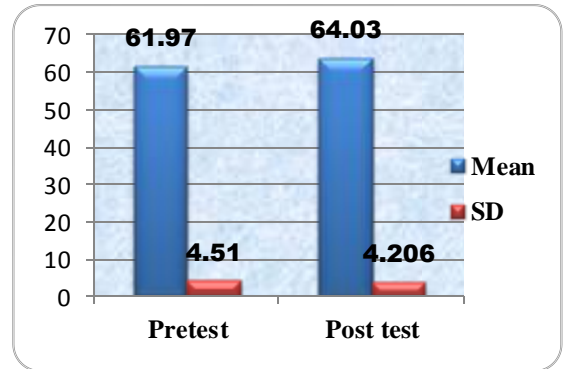
Note: * significance at 0.05 level

The paired sample "t" test table 1 reveals that the pre test scores of control group where N=60, mean value 61.97, standard deviation 4.510 less than post test scores, where N=60, mean value 64.03, standard deviation 4.206 and the calculated 't' value 6.964 and obtained significant value is 0.000 significant at 0.05 level. Hence the stated null hypotheses can be rejected and research hypothesis is accepted. Thus can be stated as, there is a significant difference between pre test and post test scores of control group.

H_0: There is no significant difference between pre test and post test scores of experimental group.

H_1: There is a significant difference between pre test and post test scores of experimental group.

Table 2: Calculated values of pre test and post test scores of experimental group

	N	Mean	SD	"t" value	df	Sig.(2-tailed)
Pre test	60	62.18	4.335	16.932	59	0.000*
Post test	60	74.18	4.417			
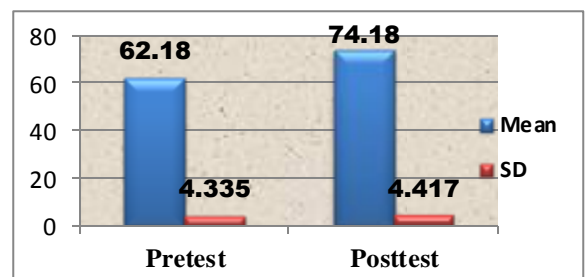
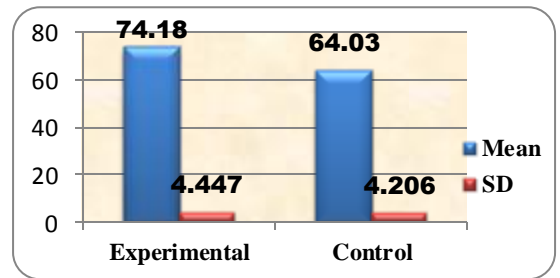**Note: * significance at 0.05 level**

The paired sample "t" test table 2 shows that the pre test scores of PU students where N=60, mean value 62.18, standard deviation 4.335 less than post test scores, where N=60, mean value 74.18, standard deviation 4.417 and the calculated 't' value 16.932 and obtained significant value 0.000 is significant at 0.05 level. Hence the stated null hypotheses can be rejected and research hypothesis is accepted. Thus can be stated as, there is a significant difference between pre test and post test scores of experimental group.

H_0: There is no significant difference between mean scores of experimental and control group.

H_1: There is a significant difference between mean scores of experimental and control group.

Table 3: Calculated value of post test scores of experimental and control group.

| Groups	N	Mean	SD	"t" value	df	Sig.(2-tailed)
Experimental	60	**74.18**	**4.447**	**14.157**	59	**0.000***
	60	64.03	4.206			
Control						

Note: * significance at 0.05 level

The paired sample "t" test table 3 shows that post test scores of experimental group where N=60, mean value 74.18, standard deviation 4.447 is more than the control group, where N=60, mean value 64.03, standard deviation 4.206 and the calculated 't' value 14.157 and obtained significant value 0.000 is significant at 0.05 level. Hence the stated null hypotheses can be rejected and research hypothesis is accepted. Thus can be stated as, there is a significant difference between mean scores of experimental and control group.

H_0: There is no significant difference between post test scores of girls and boys of experimental group

H_1: There is a significant difference between post test scores of girls and boys of experimental group

Table 4: Calculated value of post test scores of girls and boys of experimental group

	N	Mean	SD	"t" value	df	Sig.(2-tailed)
Girls	30	75.37	3.275	7.256	29	0.000*
Boys	30	69.70	3.725			
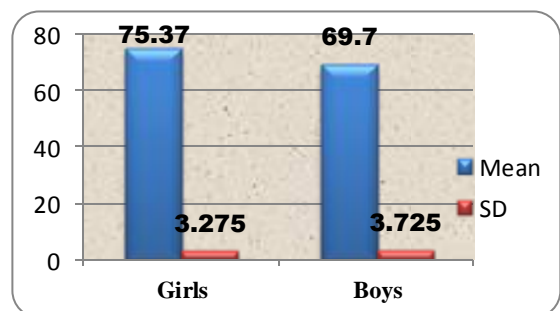
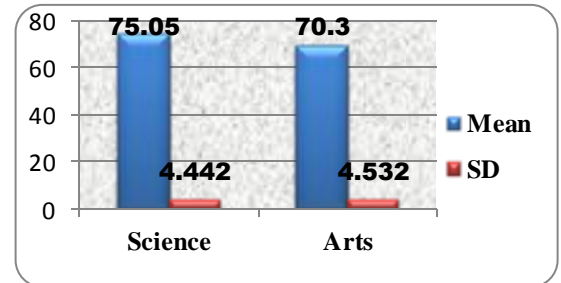**Note: * significance at 0.05 level**

The paired sample "t" test table 4 shows that post test scores of girls where N=30, mean value 75.37, standard deviation 4.447 is more than the pre test scores, where N=30, mean value 64.03, standard deviation 4.206 and the calculated 't' value 14.157 and obtained significant value is 0.000 is significant at 0.05 level. Hence the stated null hypotheses can be rejected and research hypothesis is accepted. Thus can be stated as, there is a significant difference between post test scores of girls and boys of experimental group.

H_0: There is no significant difference between post test scores of Science and arts students
H_1: There is a significant difference between post test scores of Science and arts students

Table 5: Calculated value of post test scores of science and arts experimental group

|	N	Mean	SD	"t" value	df	Sig.(2-tailed)
Science	20	75.05	4.442	5.023	19	0.000
Arts	20	70.30	4.532			

Note: * significance at 0.05 level

The paired sample "t" test table 5 shows that post test scores of science experimental group where N=20, mean value is 75.05, standard deviation is 4.442 is more than the post test scores of arts experimental group, where N=20, mean value is 70.30, standard deviation is 4.532 and the calculated 't' value is 5.023 and obtained significant value is 0.000 is significant at 0.05 level. Hence the stated null hypotheses can be rejected and research hypothesis is accepted. Thus can be stated as, there is a significant difference between post test scores of science and arts experimental group.

H_0: There is no significant difference between post test scores of Science and Commerce students

H_1: There is a significant difference between post test scores of Science and arts students

Table 6: Calculated value of post test scores of science and commerce of experimental group

	N	Mean	SD	"t" value	df	Sig.(2-tailed)
Science	20	75.05	4.442	3.008	19	0.007
Commerce	20	72.25	3.259			
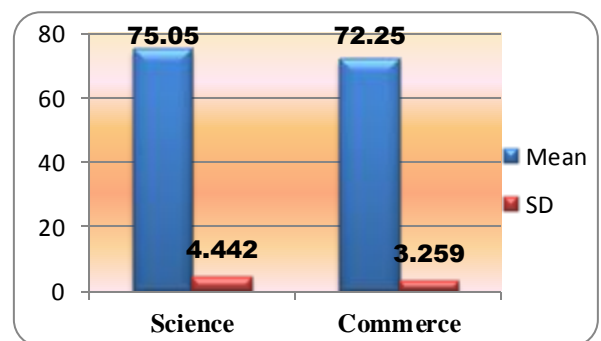
Note: * significance at 0.05 level

The paired sample "t" test table 6 shows that post test scores of science experimental group where N=20, mean value is 75.05, standard deviation is 4.442 is more than the post test scores of commerce experimental group, where N=20, mean value is 72.25, standard deviation is 3.259 and the calculated 't' value is 3.008 and obtained significant value is 0.007 is significant at 0.05 level. Hence the stated null hypotheses can be rejected and research hypothesis is accepted. Thus can be stated as, there is a significant difference between post test scores of science and
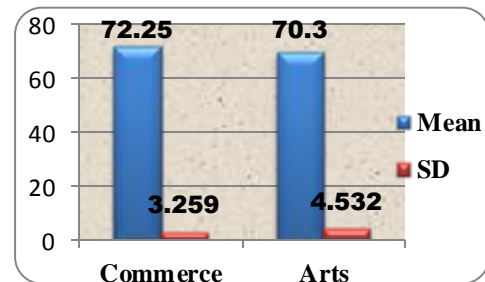
commerce experimental group.

H_0: There is no significant difference between post test scores of commerce and arts experimental group

H_1: There is a significant difference between post test scores of commerce and arts experimental group

Table 7: Calculated value of post test scores of commerce and arts experimental group

	N	Mean	SD	"t" value	df	Sig.(2-tailed)
Commerce	20	72.25	3.259	3.034	19	0.007
Arts	20	70.30	4.532			

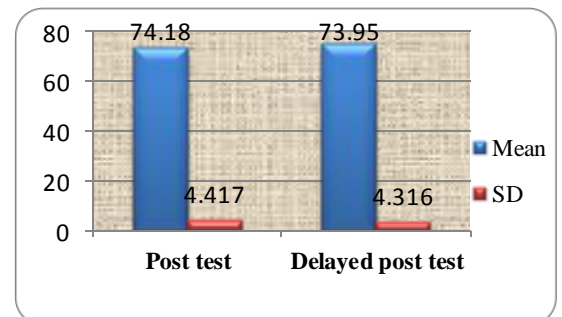**Note: * significance at 0.05 level**

The paired sample "t" test table 7 shows that post test scores of science experimental group where N=20, mean value is 72.25, standard deviation is 3.259 is more than the post test scores of arts experimental group, where N=20, mean value is 70.30, standard deviation is 4.532 and the calculated 't' value is 3.034 and obtained significant value is 0.007 is significant at 0.05 level. Hence the stated null hypotheses can be rejected and research hypothesis is accepted. Thus can be stated as, there is a significant difference between post test scores of science and arts experimental group.

H_0: There is no significant difference between post test and delayed post test scores of experimental group

H_1: There is a significant difference between post test and delayed post test scores of experimental group.

Table 8: Calculated value of post test and delayed post test scores of experimental group

	N	Mean	SD	"t" value	df	Sig.(2-tailed)
Post test	60	74.18	4.417	1.669	59	.095
Delayed Post test	60	73.95	4.316			

Note: * significance at 0.05 level

The paired sample "t" test table 8 shows post test scores of experimental group where N=60, mean value is 74.18, standard deviation is 4.417 is more than delayed post test scores of

experimental group, where N=60, mean value is 73.95, standard deviation is 4.316 and the calculated 't' value is 1.669 and obtained significant value is 0.095 is not significant at 0.05 level. Hence the stated null hypotheses can be accepted and research hypothesis is rejected. Thus can be stated as, there is no significant difference between post test and delayed post test scores of experimental group.

Conclusion and suggestion:

The study was conducted by the researcher has revealed that the branching programmed learning material developed by the researcher on English grammar for PU students was found effective in terms of achievement of the learners and they were satisfied with the material. With the obtained results the researcher would like to suggest that such learning materials are need to be developed and widely deployed for the revival of English grammar. Such attempts need to be made at a large scale at all the levels of education.

Major findings of the study:

1. There is a significant impact of branching programmed learning material in English grammar.
2. There is a significant difference between academic achievements and branching programmed learning material of PU science, arts and commerce students.
3. There is a significant difference between gender and learning outcome of branching programmed learning material.
4. There is no significant difference between post test and delayed post test in learning outcome of science, arts and commerce students.

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