IMPACT OF CAI ON THE ACHIEVEMENT OF SCIENCE STUDENTS AT HIGH SCHOOL LEVEL

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Abstract: Science occupies a unique position in the school curriculum. Science is central to many science related courses such as medicine, pharmacy, agriculture, nursing, biochemistry and so on. Science is introduced to students at senior secondary school level as a preparatory ground for human development, where career abilities are groomed, and potentials and talents discovered and energized (Federal Republic of Nigeria, 2009). The investigator chose the XI Standard students of Science group from St. Charles Hr. Sec School, Thiruvalluvar nagar, Madurai. From the 98 students the investigator selected 50 students based on the scores in the performance test. The students who scored average were selected for this study and the homogeneity was established.

Key words: CAI, Achievement in Science, Instructional tool, Effectiveness.

INTRODUCTION:

Science is a natural science that deals with the living world: How the world is structured, how it functions and what these functions are, how it develops, how living things came into existence, and how they react to one another and with their environment (Umar, 2011).Science is introduced to students at senior secondary school level as a preparatory ground for human development, where career abilities are groomed, and potentials and talents discovered and energized (Federal Republic of Nigeria, 2009).The quality and quantity of science education received by secondary school students are geared toward developing future scientists, technologists, engineers, and related professionals (Kareem, 2003).

NEED AND SIGNIFICANCE OF THE STUDY:

Science occupies a unique position in the school curriculum. Science is central to many science related courses such as medicine, pharmacy, agriculture, nursing, biochemistry and so on. It is obvious that no student intending to study these disciplines can do without Science. With reference to various research studies, Pfefferova (2015) stresses that "use of computer assisted instruction appears to make easier student's conceptual understanding, requires less time as traditional methods, and improves the ability to predict the results of experiments".

OBJECTIVES:

➢ To find out the significant difference between pre and post test scores in CAI in Science at the High school level in the experimental group.

➢ To find out the significant difference between pre and post test scores in Science at the High school level in the control group.

➢ To find out the effective size for the difference between the means of pre and post test scores means in the CAI in Science at the High school level.

EXPERIMENTAL DESIGN: Pre test post test control group will be used.

SAMPLE OF THE STUDY:

The investigator chose the XI Standard students of Science group from St. Charles Hr. Sec School, Thiruvalluvar nagar, Madurai. From the 98 students the investigator selected 50 students based on the scores in the performance test. The students who scored average were selected for this study and the homogeneity was established.

TEACHING AND LEARNING IN EXPERIMENTAL AND CONTROL GROUPS

The control group was taught Digestion and Absorptionfrom bio zoology book of STD 11th text book of Tamil Nadu Govt. from page 106 – 111 using traditional method forthe period of three weeks. The experimental group was taught using Computer Assisted Instruction with the same topic of digestion and absorption from https://www.youtube.com/watch?v=ygBY-TkgYbochosen from existing and freely accessible YouTube from the internet.
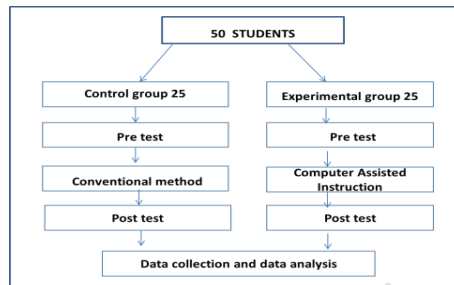
RESEARCH TOOLS:

The present study used the following tools.

1. Computer Assisted Instruction YouTube in Science
2. Achievement test

STATISCAL USED:

The sataistiacal techniques used to test the hypothesis were mean, Standard diviation and t test.

ANALYSIS AND INTERPRETATION:

Hypothesis 1:

CAI in Science at the High school level is not effective.

Table 1:

The post test scores of the experimental group and control group through CAI and traditional method do not differ.

Variable	Test	N	M	SD	Mean Difference	T Value	Df	Level of Significance
Experimental group	E post	25	35.4	10.39	10.36	3.29	48	0.01
Control group	e post	25	25.04	11.83				

The mean of the post test scores of the experimental group thaught through CAI is found to be 35.4 with an SD 10.39. The mean of the post test scores of the control group taught through trational method is found to be 25.04 with an SD 11.83. the mean difference 10.36 is found to be significant at 0.01 level with a 't'of 3.29. therefore the hypothesis is rejected. So it is concluded that the CAI in Science at the High school level is effective is compared to that of the control group.

Fig 3 Comparison of the mean score of the post test of the experimental and control group
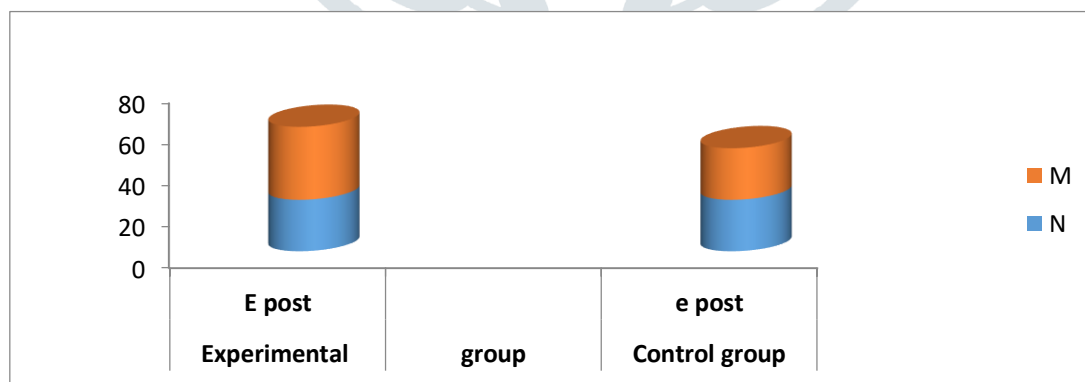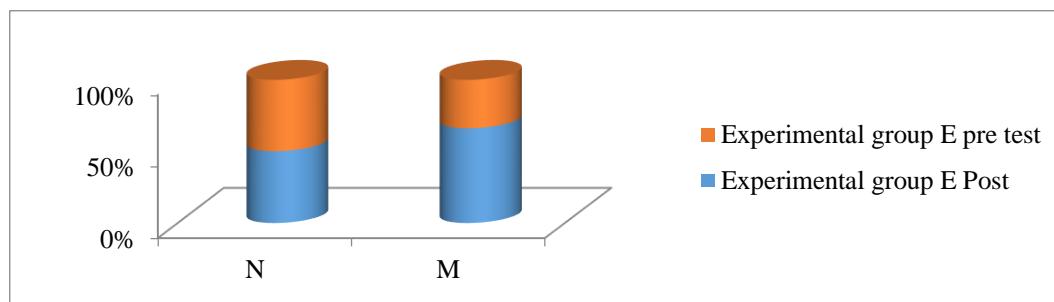

Hypothesis 2:

The Post test means scores will be higher than Pre test scores of the experimental group

Table 2:

Variable	Test	N	M	SD	Mean difference	T Value	Df	Level of Significance
Experimental group	E Post	25	35.4	10.39	17.2	5.53	48	0.01
	E pre test	25	18.2	11.57				

In the table 2, the mean difference is 17.2 and it is significant for the t value 5.53 which is significant at 0.01 levels therefore the hypothesis is rejected. So it is concluded that there is a significant difference between the post and pre test scores of the experimental group taught through CAI in Science at the High school level.

Fig 4 : Comparison of the mean score of the pre and post test of the experimental group

Hypothesis 3:

The post test mean scores will be higher than pre test mean scores of the control group

Table 3:

Variables	Test	N	M	SD	Mean difference	T value	Df	Level of significance
Control group	e post	25	25.04	11.83	0.84	0.214	48	NS
	e pre test	25	24.2	15.73				

In the table 3, the mean difference is 48 is found to be not significant for the t value 0.214 for 48 Df therefore hypothesis is accepted. So it is concluded that there is significant difference between the post and pre test scores of the control group taught through the traditional method in Science at the High school level.

Fig 5 Comparison of the mean score of the pre and post test of the control group
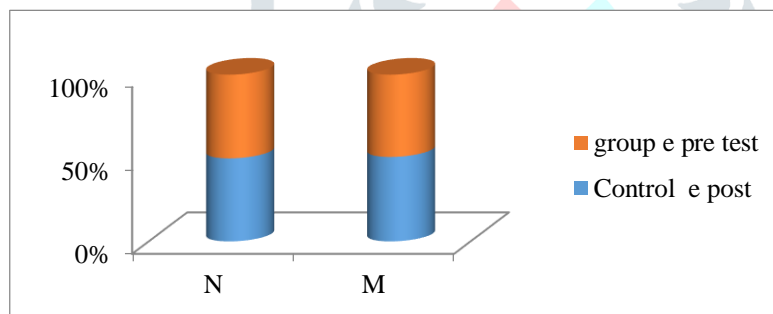
FINDINGS OF THE STUDY:

- It is found that there is significant difference between the pre test and post test of the experimental and control group.
- It is found that there is no significant difference the pretest and post test of the control group.
- It is found that there is significant difference between the pretest and post test scores of the experimental group.
- It is found that there is a significant difference between the pretest and post test scores of the experimental group in the CAI in Science at the High school level.

CONCLUSION:

We cannot deny the fact that many technological developments and innovations played a major role in our lives. The kind of life we are currently enjoying because of technology developments. Technology improved our lives and the present things are now better faster, easier, and more convenient. Technology integrated in teaching learning process includes CAI. The study shows that superiority of CAI in relation to traditional method in achievement in Science. Thus efforts can be taken to implement CAI in the Science classes so as to succeed the purpose of achievement in Science at the High school level.

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