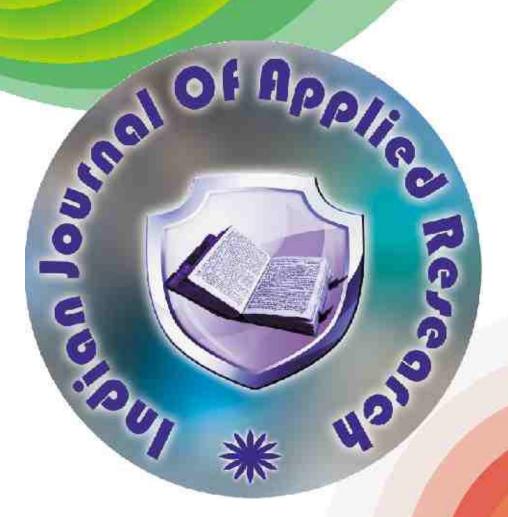
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Research Paper

Education



A Study Of The Interactive Influence Of CAI Package On Academic Achievement

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ABSTRACT

The computers with its technologies are used in educational and instructional process with their various strategies. The aim the present research was to study the interactive influence of CAI Package for the student-teachers with different learning styles. The sample included 160 students of two colleges located in Mumbai. The Control group was taught the topic of personality with traditional classroom method whereas the experimental group was taught by using CAI package CD prepared by the researcher for the same topic. It was found that there is a significant interactive influence of Independent v/s Dependent, Participant v/s Avoidant, Competitive v/s Collaborative Learning Style and the treatment on academic achievement scores of student- teachers. The students with the "Independent", "Participant" and "Competitive" learning styles found learning through CAI package more effective than those against the versus learning styles respectively.

Keywords:

The information technology is a very important aspect and have been used increasingly in education as a sub institution of society. As a result, new study fields and new disciplines are appeared. These fields in turn require intensive use of information and communication technologies in education.

Traditionally, a teacher would teach the students and they passively listen and acquire facts. They always follow the teacher and the content being taught. The teacher would not consider the learning styles of students while teaching. But now in this technological era, the total scenario is changed. Many teaching learning technologies are appeared which are helpful to improve the academic achievement of the learners. Computer Assisted Instruction (CAI) is one of the strategy being used to improve student achievement in learning process. It refers to computer programs that provide drill and practice exercises. The computers with its technologies are an important tools to address more at a time as compared to other technological tools. It is also making abstract and complicated concepts more clear because of their extensive multimedia properties. They are used in educational and instructional process with their various strategies. Now, CAI is being used in educational institutions for the purpose of achieving educational outcomes.

Need of the Study

Several studies have been undertaken during last few years on how effectively computers have been used in education. The review of related literature revealed that very few studies have been conducted in psychology for student teachers. But this topic was not studied so far.

Aim

To study the effect of Computer Assisted Instruction Package for the topic of personality in educational psychology subject for student teachers with different learning styles.

Objectives

To study the interactive influence of

- Independent v/s Dependent Learning Style and the treatment
- 2. Participating v/s Avoidant Learning Style and the treatment
- Competitive v/s Collaborative Learning Style and the treatment on academic achievement scores of studentteachers.

Hypothesis

There is no significant interactive influence of

- Independent v/s Dependent Learning Style and the treatment
- Participating v/s Avoidant Learning Style and the treatment
- Competitive v/s Collaborative Learning Style and the treatment on academic achievement scores of studentteachers.

Sample

In this study, the convenience sampling method is used. The total sample consisted of 160 student-teachers from Teacher degree colleges Mumbai.

Table 1.1: Distribution of Total Sample

Group	Males	Females	Total No. of
			student Teachers
Control	42	38	80
Experimental	20	60	80
Total	62	98	160

Methodology

The present study has adopted the experimental method. Tools

- 1) Personal data sheet
- 2) Achievement test prepared by the researcher
- 3) Grasha Reichmann student scale
- 4) Instructional Material

Data Analysis

The data collected through achievement test and GRSLSS inventory was analyzed qualitatively by using the descriptive analysis and inferential methods.

Testing Hypothesis 1

Table 1.2: The Mean Differences by Treatment and Independent v/s Dependent Learning Styles

Learning Styles	Control	Experimental	Total
Independent	N = 39	N = 36	N = 75
	Mean = 6.62	Mean = 11.69	M = 9.19
Dependent	N = 41	N =44	N = 85
	Mean = 9.24	Mean = 7.77	M = 7.99
Total	N = 80	N = 80	
	M = 5.91	M = 11.19	

Table 1.3: ANOVA for Gain Academic Achievement Scores by Treatment

attriorit					
Sources of Variation	SS	DF	MSS	F	Remark
Among Rows	135.77	1	135.77	9.08	Significant
Among Columns	1013.03	1	1113.03	74.40	Significant
Interaction	18.64	1	18.64	1.25	Not Significant
Within Group	2334.16	156	14.96		
Total	3501.6	159			

Ss = Sum of Squares, Df = Degree of Freedom, MSS = Mean Sum of Square

Since the two F's refute the null hypothesis, the 't' test is applied to find out which means differ significantly.

Table 1.4: The Mean Differences of the Gain Academic Achievement Scores by treatment

• •	one occioo by troutment					
	Group	Mean	SED	t		
	Control	5.91	0.61	8.66		
	Experimental	11.19				
	Independent	9.19	0.61	1.97		
	Dependent	7.99				

1) Control v/s Experimental

The obtained t = 8.66 is greater than the tabulated value of t =2.61 at 0.01 level of significance. Therefore as 't' is significant, the null hypothesis is rejected.

Independent v/s Dependent

The obtained t= 1.97 is greater than the tabulated value of t =1.96 at 0.05 level of significance. Therefore as 't' is significant, the null hypothesis is rejected.

Conclusion: There is a significant interactive influence of Independent v/s Dependent Learning Style and the treatment on academic achievement scores of student-teachers.

On the basis of these findings, it can be said that students with the "independent" learning style found learning through CAI package more effective than those with "dependent" learning styles. The students with independent learning style are less teacher-dependent for answers whereas, the students with dependent learning style view teachers and peers as sources of structure and support.

Testing Hypothesis 2

Table 1.5: The Mean Differences by Treatment and Learning Styles

Learning Styles	Control	Experimental	Total
Avoidant	N = 65	N = 64	N = 129
	Mean = 5.75	Mean = 10.94	M = 8.33
Participant	N = 15	N = 16	N = 31
	Mean = 6.6	Mean = 12.19	M = 9.48
Total	N = 80	N = 80	
	M = 5.91	M = 11.19	

Table 1.6: ANOVA for Gain Academic Achievement Scores by Treatment and Learning Styles

Sources of Variation	SS	df	MSS	F	Remark
Among Rows	33.53	1	33.53	0.37	Not significant
Among Columns	1113.03	1	1113.03	12.36	Significant
Interaction	13.19	1	13.19	0.15	Not significant
Within Group	14048.25	156	90.05		
Total		159			

Since one 'F' refute the null hypothesis, the 't' test is applied to find out which means differ significantly.

Table 1.7: The Mean Differences of the Gain Academic Achievement Scores by Treatment and Learning Styles

Group	Mean	SED	t
Control	5.91	0.61	8.66
Experimental	11.19		

The obtained t= 8.66 is greater than the tabulated value of t =2.61 at 0.01 level of significance. Therefore as 't' is significant, the null hypothesis is rejected.

Conclusion: There is a significant interactive nfluence of Participant v/s Avoidant Learning Style and the treatment on academic achievement scores of student-teachers.

It can be said that students with the "participant" learning style found learning through CAI package more effective than those with "avoidant" learning style whereas, the students with avoidant learning style are not enthusiastic about learning content and attending class.

Testing Hypothesis 3

Table 1.8: The Mean Differences by Treatment and Competitive v/s Collaborative Learning Styles

Learning Styles	Control	Experimental	Total
Collaborative	N = 31	N = 35	N = 66
	Mean = 6.42	Mean =11.26	M = 8.99
Competitive	N = 49	N = 45	N = 94
	Mean =5.59	Mean = 11.13	M = 8.25
Total	N = 80	N = 80	
	M = 5.91	M = 11.19	

Since one 'F' refute the null hypothesis, the 't' test is applied to find out which means differ significantly.

Table 1.10: The Mean Differences of the Gain Academic Achievement Scores by Treatment and Learning Styles.

Group	Mean	SED	t
Control	5.91	0.61	8.66
Experimental	11.19		

The obtained t= 8.66 is greater than the tabulated value of t =2.61 at 0.01 level of significance. Therefore as 't' is significant, the null hypothesis is rejected.

Conclusion: There is a significant interactive influence of Competitive v/s Collaborative Learning Style and the treatment on academic achievement scores of student-teachers.

It can be said that students with the "competitive" learning style found learning through CAI package more effective than those with "collaborative" learning style.

In conclusion, the results of this study indicated that the individual differences in learning style can have effects on the performance of students depending on the instructional procedures. As a stand point, teachers need to acknowledge that students are different and ensure that the instructional procedures applied in the classrooms take such diversity into account. To do this well, more information about student's and teachers learning styles should be known. Being aware of students' learning styles, make the teacher aware of his/her teaching styles. Hence, there is a necessity for a balanced curriculum that would provide learning tasks and different instructional techniques to fit all categories of students who have different personal traits and allow all these students achieve to the best of their ability.

The present study shows that, the students should be given an opportunity of self learning with the help of CAI package wherever it is possible. The teacher should try to develop CAI packages in various subjects to make the subjects more interesting and motivate students for self learning.

Conclusion: The learning through CAI package is effective.

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