



An Experimental Study of Effectiveness of Computer Assisted Instructions on the Achievement and Self-Concept of Elementary Teacher Trainees

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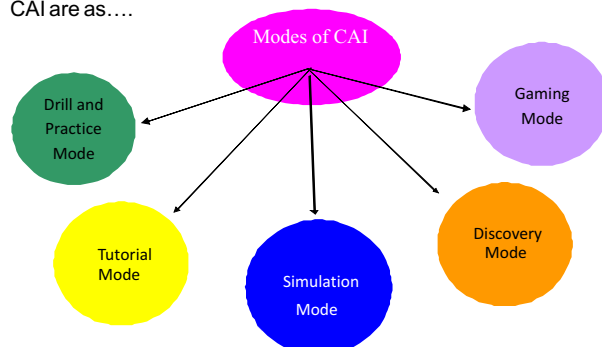
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Introduction

Today we are living in 'Information age' which is a result of scientific inventions and technological advancement. Technology has influenced all aspects of society in general and education in particular. Traditionally teaching was done by oral discussions and mainly through lectures, but now technology is used by teachers for complementing and supplementing the instructions they deliver. Technological era in teaching-learning process started from the use of print material accompanied by radio and television broadcasting. The School TV project was introduced in Delhi in December 1961 and now it is widely used in education. The Year 1972-73 is a landmark in the history of educational technology in India. SITE was established in 1975 and NCERT in 1984. INSAT, CLASS, EDUSAT brought information revolution in education. With the introduction of NPE 1986, initiatives were taken to use computers in teaching-learning process. Computer is the finest and the most important gift of science and technology to mankind. In education, instructional work carried out with the help of computers is generally known as computer assisted instruction or CAI in brief. "Computer assisted instruction has now taken as so many dimensions that it can no longer be considered as simple derivative of teaching machine or the kind of programmed learning that skinner introduced" Hilgard and Bower (1977)

Computer Assisted Instruction is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that take place. It uses a combination of text, graphics, sound and Video is enhancing the learning process. CAI most often refers to drill and practice, tuitions or simulation activities offered by themselves or as supplement to traditional teacher directed instructions. Bhatt and Sharma (1992) stated that "CAI is defined as an interaction between a students, a computer controlled display and a response entry device for the purpose of achieving educational outcomes". CAI has its own merits and limitations too so it should be used to complement and supplement the traditional classroom teaching rather than in an independent way. The modes of CAI are as....



Concept Of Achievement

As per Webster's New world Dictionary (1976) "Achievement is achieving a desired result especially by skill, work etc." Thus achievement means all those behavioral changes which take place in the individual as a result of learning experience of various kinds. In other words by achievement we mean proficiency of performance generally measured by standardized task or test the act of attaining an end or of carrying out a purpose. Achievement is mostly applied to perform in educational test rather than psychological test that is, it implies demonstration of required ability, skills, knowledge or understanding than inherent capacity.

Achievement in the present study is based on the scores or marks of students obtained in self made achievement test which is introduced as pre and post test.

concept of self-concept

Self-concept or phenomenal self refers to the individual's perception of himself i.e. what he thinks of himself or what he actually is? It is his original personality which reveals his self-concept. As Comb and Snugg, says "self-concept is the individual's perception or view of himself". Self-concept is not innate but is developed by the individual through interaction with the environment and reflecting on that interaction, self-concept in the present study is based on the scores of students obtained by using self-concept inventory, constructed and standardized by Dr. Bina Shah scale.

Research Questions

- What is the effect of conventional teaching on achievement and self-concept of elementary teacher trainees?
- What is the effect of CAI on the achievement and self-concept of Elementary Teacher Trainees?
- What is the level of effectiveness of CAI on achievement and self-concept of Elementary Teacher Trainees over conventional method?

Objectives Of The Study

- To find out the effect of conventional teaching on achievement and self-concept of Elementary Teacher Trainees.
- To find out the effect of CAI on the achievement and self-concept of Elementary Teacher Trainees.
- To study the effectiveness of CAI on achievement and self-concept of Elementary Teacher Trainees over conventional method.
- To prepare a CAI package on 'Communication'.

Hypotheses Of The Study

- i) There will be no significant difference in the mean achievement in pre-test between control and experiment group.
- ii) There will be no significant difference in the mean achievement in Post-test between control and experiment group.
- iii) There will be no significant difference in the mean Self-concept of experimental group in Pre-test and Post test.
- iv) There will be no significant difference in the mean Self-concept of experimental group in Pre-test and Post test.
- v) There will be no significant difference in the mean Self-concept in the Pre-test between both the groups.
- vi) There will be no significant difference in the mean Self-concept in Post-test between both the groups.

Population Of The Study

In the present study all the student teachers enrolled in E.T.T. (1st year) programme being run by J & K Board of School education, constitute the population.

Sample Of The Study

In this study, the sample is purposively related from the two sections of E.T.T. (1st year) i.e. 1st year A and 1st year B of the Vivekananda Institute of E.T.T., Lakhapur. The total number of students for both the sections are 100.

Delimitations Of The Study

- (1) The study will be delimited to Elementary Teacher Trainees (1st year) of Jammu Board enrolled under Vivekananda College of Education, Lakhapur during Academic Session 2008-10.
- (2) The study will also be delimited to the study of effectiveness of CAI on achievement of E.T.T. (1st year) students with the help of self made achievement test. Two units of subject educational technology will be taught to them for a specified period of one month.
- (3) The study will also be delimited to the study of effectiveness of CAI on Self-concept of the sample with the help of standardized test.

Data Analysis

Showing the t-value between the Pre and Post test situation of Controlled Group with regard to their Achievement.

S.No.	Controlled Group	N	Mean	S.D	r	SEMD	t-value	Result
1	Pre-Test	50	17.80	4.52	0.88	2.27	1.49	Insignificant
2	Post-test	50	21.18	4.73				

*significant at .05 level

- ** Significant at .01 level
t. at .05 level = 1.96
t at .01 level = 2.58

Showing the t-value between the Pre and Post test situation of Controlled Group with regard to their Achievement

S.No.	Controlled Group	N	Mean	S.D	r	SEMD	t-value	Result
1	Pre-Test	50	17.80	4.52	0.88	2.27	1.49	Insignificant
2	Post-test	50	21.18	4.73				

- ** Significant at .01 level
t. at .05 level = 1.96
t at .01 level = 2.58

Showing the t-value between the Pre and Post test situation of Experimental Group with regard to their Achievement.

S.No.	Experimental Group	N	Mean	S.D	r	SEMD	t-value	Result
1	Pre-Test	50	17.98	4.73	0.60	2.84	2.89**	Significant
2	Post-test	50	26.20	4.73				

- ** Significant at .01 level
t. at .05 level = 1.96
t at .01 level = 2.58

Showing the t-value of the Pre test situation between the Controlled Group and Experimental Group with regard to their level of Achievement.

S.No.	Group	N	Mean	S.D	r	SEDM	t-value	Result
1	Controlled Group	50	17.80	4.52	0.78	0.23		Insignificant
2	Experimental Group	50	17.98	4.73				

- ** Significant at .01 level
t. at .05 level = 1.96
t at .01 level = 2.58

Showing the computation of t-value between Controlled and Experimental Group in their Post-test situation with regard to their level of Achievement

S.No.	Group	N	Mean	S.D	r	SEDM	t-value	Result
1	Controlled Group	50	21.18	4.73	0.78	5.02**		Significant
2	Experimental Group	50	26.2	4.73				

- ** Significant at .01 level
t. at .05 level = 1.96
t at .01 level = 2.58

Showing the t-value between the Pre and Post test situation of Controlled Group with regard to their self-concept.

S.No.	Group	N	Mean	S.D	r	SEDM	t-value	Result
1	Pre-Test	50	101.78	4.73	0.96	2.3	1.13	Insignificant
2	Post-Test	50	104.38	4.73				

- ** Significant at .01 level
C.R. at .05 level = 1.96
C.R. at .01 level = 2.58

Showing the t-value between the Pre and Post test situation of Experimental Group with regard to their Self-Concept.

S.No.	Experimental Group	N	Mean	S.D	r	SEMD	t-value	Result
1	Pre-Test	50	100.2	4.73	0.43	4.29	2.73**	Significant
2	Post-Test	50	111.94	4.73				

- ** Significant at .01 level
t. at .05 level = 1.96
t at .01 level = 2.58

Showing the t-value of Pre test situation between the Controlled and the Experimental Group with regard to their Self-Concept.

S.No.	Groups	N	Mean	S.D	r	SEDM	t-value	Result
1	Controlled Group	50	101.78	4.73	1.28	1.23		Insignificant
2	Experimental Group	50	100.2	4.73				

- ** Significant at .01 level
t. at .05 level = 1.96
t at .01 level = 2.58

Showing t-value of Post test situation between the Controlled and Experimental Group with regard to their self-concept.

S.No.	Groups	N	Mean	S.D	r	SEDM	t-value	Result
1	Controlled Group	50	104.38	4.73	1.27	5.9**		Significant
2	Experimental Group	50	111.94	4.73				

** Significant at .01 level *Significant at .05 level
 t at .05 level = 1.96
 t at .01 level = 2.58

Major Findings Of The Study And Discussion Of The Results

The investigator has drawn the following conclusions on the basis of the analysis and interpretation of the data:

1. The level of achievement and self-concept of controlled group in the pre and post test situation has been found insignificant.
2. There was significant difference in the achievement and self concept of the students of experimental group in the pre and post test situation.
3. There was no significance of difference in the achievement and self concept of the students of control and experimental group in pre test situation.
4. The level of achievement and self-concept of the students of controlled and experimental group in post test situation has been found significant.
5. Students showed favorable response regarding learning through Computer assisted instruction
6. The level of achievement and self-concept of students of experimental group has been increased after teaching them through CAI.
7. The students of experimental group showed keen interest in participating the group activities, project works while learning through CAI.

REFERENCES

- Aggarwal, Y.P. (1957) Self-concept and Scholastic Achievement Journal of Education Research and Extension, vol. 4(2). | Burns (1979) Webster's New Twentieth Century Dictionary, U.S.A world publishing Co. Ins. | Best, John W. and Janes V. Kahn, (1992) Research in education, New Delhi: Prentice Hall of India Pvt. Ltd. | Bracey, G.W. (1987) Computer Assisted instruction What the Research shows. Electronic Learning, vol.7(3), PP. 22-23 | Chauhan S.S. (1979) Innovation in Teaching Learning Process, New Delhi: Vikas Publishing Pvt. Ltd. | Darley, W.C. & Baker, C. (1988) Comparing a pre-service mainstreaming class taught by traditional methods with a similar class taught by computer assisted instruction. Computer in the Schools, vol.5 (1-2), PP.151-255. | Edwards, J.; Norton, S. Taylor, S., Weiss, M.; and Dusseldorp, R. (1997) "How effective is CAI? A Review of the Research." Educational Leadership 33/2 (1975): 147-153. | Koul, Lokesh (1997) Methodology of Educational Research (3rd revised edn.) New Delhi. | Vikas Publishing House Pvt. Ltd. | Lowe J. (2002) Computer Based Education Is it a Panacea? Journal of Research on Technology in Education 34 (2), pp.163-171. | Verma and Sharma (2004) Statistics in Education and psychology, Narendra Publishing Hall, Jalandhar. | Worrell, F.C. Roth, D.A. and Gabelko, N.H. (1998) Age and Gender differences in the Self-concept of Academically Talented Students, Journal of Secondary Gifted Education, Vol 9 (4). pp. 157-162.