

Impact of Computer Assisted Instruction on Level of Aspiration



Ashish Pathak

Assistant Professor,
Deptt. of Teacher Education,
SMP Govt Girls PG College,
Meerut, (U.P.), India

Abstract

The present study was conducted to assess the effectiveness of Computer Assisted Instruction Program on students' Level of Aspiration. Present study was Quasi experimental in nature. Sample of the study was 150 B.Ed. students of DBRA University, Agra (75 students from science stream and 75 students from Art stream). Before treatment commenced, the level of aspiration test was administered as pre-test to the group. All students were taught by the computer assisted instructions which was developed by the researcher itself, in the subject area of environmental education of B.Ed. students. The study was carried out over four weeks. Level of aspiration among students are compared by pre-test and post-test scores. Researcher found that the mean value of post test scores of level of aspiration of students was more than that of pre-test scores and mean difference was found significant. Findings of this research indicate that CAI significantly affects the level of aspiration of B.Ed. students. Based on findings, it was recommended that computer assisted instruction technique should be used by the teachers of teaching training institutions for stimulating and boosting students' level of aspiration.

Keywords: Computer Assisted Instruction, Environmental Education, Level of Aspiration.

Introduction

Computer assisted instruction is described as the process by which written and visual information is presented in a logical sequence to a student by a computer. The computer serves as an audio-visual device. The students learn by reading the text material presented or by observing the graphic information displayed. The primary advantage of the computer over other audio-visual devices is the automatic interaction and feedback that the computer can provide. Multiple paths through the course material can be taken depending upon the individual student's progress. Computer assisted instruction is a form of independent learning where the students have the responsibility to learn.

Computer assisted instruction is an educational medium in which instructional content or activities are delivered by a computer. Computer assisted instruction uses a blend of graphs, texts, sounds and videos for learning process (Onasanya, Daramola, & Asuquo, 2006) CAI represents a paradigm where knowledge is constructed and sought by the learner. Learner plays an active role in learning process. Learning is individualized, self-paced and hands on. Students learn by interaction with the computer and appropriate feedback is provided. Poole (1997) defined computer assisted instruction as a computer based system designed to help students learn subject matter of all kind.

There are many variables related to student which also affect the academic achievement such as, achievement motivation, level of aspiration etc. Sharma & Nigam (2003) found that impact of level of aspiration on the academic achievement was positively shown. Every individual has certain goals which he aspires to achieve in his life. The standard he expects to achieve in any task is described by psychologists as his level of aspiration. Level of aspiration decides the efforts of a person in any field. Therefore Level of aspiration is directly related to academic achievement also. With the help of new innovative technique and teaching method like CAI, we can increase the level of inspiration of students towards environmental education. This study introduced Computer assisted instruction sessions in environmental education teaching for B.Ed. students with the intention of making students more responsible for their learning and also to explore the effect of Computer assisted instruction on Level of aspiration of students also.

Significance of the Study

Computer Assisted Instruction (CAI) has been proving an effective medium of education in the advanced countries for formal and non-formal education at all the levels. The use of computers in the classroom has boomed since the 1980s but studies within the past 15-20 years have focused on the relationship between CAI and academic achievement in many different subject areas. Computer is the mainstay of today's scientific era. But enough research has not been done in the field of relationship between computer assisted instruction and psychological variables. It is found from many researches that computer assisted instruction significantly affects scientific attitude and achievement motivation along with academic achievement. Positive correlation has also been found in level of aspiration and achievement motivation. And both the variables also affect the academic achievement positively. But no study of CAI is conducted with the psychological variable 'Level of aspiration'. Therefore it was thought worthwhile to study the effectiveness of Computer assisted instruction over Level of Aspiration of B.Ed students. Findings of the study may be a source of encouragement for the widespread use of CAI at various grade levels and in varied subject areas. This study may also be a source of inspiration for researchers to develop educational software and conduct experiments.

Operational Definition of the terms used

Operational definition of Computer assisted instruction

Computer assisted instruction is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place. It allows the student to direct his/her own progress. CAI learning uses a combination of text, graphics, 3-D pictures and sound in the learning process.

Operational definition of Level of Aspiration

According to the Level of Inspiration measure inventory of Dr. Mahesh Bhargava Level of Inspiration is an individual's future expectation or ambition. It refers to the estimates of the one's future in a given task. The Level of Inspiration is usually measured in terms of goal discrepancy scores, when GDS is very high or low, it may be claimed that one is merely imaginative, unrealistic, below or above his self-esteem, on the contrary when, actual performance and expectation of the individual is about the same, it may be said that person is realistic and practical in life.

Objectives of the Study

1. To find out the effect of CAI on level of aspiration of science students.
2. To find out the effect of CAI on level of aspiration of art students.

Research Hypothesis

1. CAI significantly affects the level of aspiration of science students.
2. CAI significantly affects the level of aspiration of art students.

Null Hypothesis

1. CAI don't affect the level of aspiration of science side B.Ed. students.
2. CAI don't affect the level of aspiration of art side B.Ed. students.

Reviews of Literature

Numbers of studies have been carried out to find the effectiveness of CAI at different levels. Litterie (2003) also investigated that CAI is more effective than lecture or conventional method of teaching at higher level of education and CAI has been assumed to have an increasing role in medical education. Morgil and Arda (2004) investigated and found that computer assisted instruction was more effective technique than traditional teaching method whereas Tabassum (2004) found that The application of CAI as supplementary strategy in teaching of Biology at secondary level was more effective. Mohammad (2010) found its effectiveness in primary level also. He found that CAI was more effective on enhancing the classification skills in young children (Experimental Group). Gautam, Neerja and Jyotpreet Kaur (2015) revealed that Computer Assisted Instruction as a technique was more effective in creating a positive attitude towards prevention of environmental pollution among students. The CAI is effective in generating environmental awareness among secondary school students. They are also independent of the residential area of the students for generating environmental awareness among secondary school students. However, they are dependent on the type of school and gender for generating environmental awareness among secondary school students. Serin and Ozbuz (2015) determined that computer-assisted science instruction based on the constructivist method positively affected the attitude of students toward science and the computer and that there was a statistically significant difference in favor of the experimental group. Chinwendu and Patience (2017) investigated that CAI had significant effects on students' interest and achievement in physics, where students in the CAI group achieved more.

Methodology

The present study aimed at ascertaining the effectiveness of computer assisted instruction on level of aspiration in the subject of Environmental Education for B.Ed. class. The present study was an experimental research. In this research the effect of independent variable (CAI) on a dependent variable (level of aspiration) was to be found out.

Population

All B.Ed. students (Prospective Teachers) of B.R. Ambedkar University, Agra, who were studying Environmental Education as a subject paper was constituted the population of present research.

Sample

The target population of this research was the B.Ed. students of Dr. B. R. A. University, Agra. So, five colleges were selected purposively. Random sampling technique was used to select B.Ed. students. All students received treatment through CAI for certain period of time. The sample for experimental group is made up of 150 students (75 males, 75

females) in which there are 75 science students and 75 art students.

Instruments / Tools

Keeping in view the nature of the problem following tools were selected for this study;

1. Computer Assisted Instruction on Environmental Education developed by researcher himself.
2. Level of Aspiration Test

Development of CAI

Researcher has developed Computer Assisted Instructional Package to teach two units of Environmental Education, utilizing computer language package 'HTML' Presentation Application tool.

Level Of Aspiration Test

This inventory has been constructed and standardized by Dr. Mahesh Bhargava and Late Prof. M.A. Shah.

The performance sheet has 50 circles which are arranged in five rows, ten in each row. Above and below of these rows there are two boxes on the right side, the upper box is for writing the number of expected scores whereas lower box is for putting the number of actual score or completed performance. Thus ten trials are needed for each subject except practice trial.

Procedure of the Experiment

The experiment was conducted in three phases:

1. pre-testing
2. Treatment

3. Post-testing

Pre-Testing

To find the effect of CAI on student's level of aspiration in environmental education, an experiment was conducted in 5 colleges of DBRA University Agra. The investigator conducted a level of aspiration test which would be used as pre-test and post-test. Administration of this pre test to the experimental group helped the investigator to study the initial level of level of aspiration of the pupils in environmental education.

Experimental Treatment

Experimental group students received treatment in the form of computer assisted instruction in the computer lab of the college. The treatment lasted for four weeks.

Post Testing

After completion of the treatment, level of aspiration test was administered again to find the post achievement scores of the group of each college. The scoring of answer sheet was done. Data was obtained on interval scale.

Analysis of Scores on Achievement Test:

Research Hypothesis (H₁)

CAI significantly affects the level of aspiration of science side B.Ed. students.

Null Hypothesis (H₀₁)

CAI don't affect the level of aspiration of science side B.Ed. students.

Table 1.0
Showing the pre test-post test score analysis of Level of Aspiration of science students of experimental group

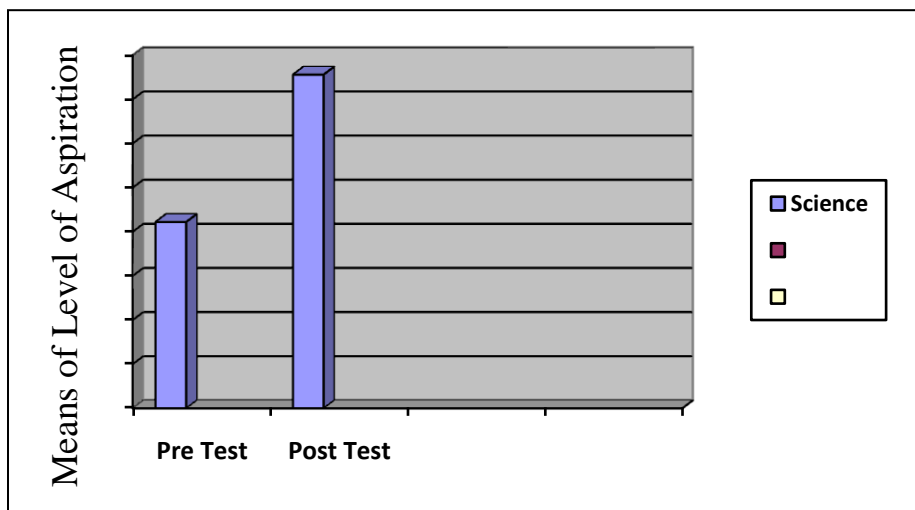
S. No.	Group of students	No. of Student	Mean	S.D.	C-R Value
1.	Pre Test Score	75	2.11	1.7	9.82
2.	Post Test score	75	3.78	1.9	[significant]

Table 1.0 denotes the mean value of pre test scores and S.D. of level of aspiration of science students is 2.11 & 1.7 respectively and mean value of post test scores and S.D. of level of aspiration of science students is 3.78 & 1.9 respectively. Difference

between mean value of pre test scores and post test scores is 1.67 which is found significant at .01 level.

Therefore the null hypothesis (H₀₁) is rejected and research hypothesis (H₁) that CAI significantly affects the level of aspiration of science side B.Ed. students, is accepted.

Diagram showing the comparison of means of Level of Aspiration On Pre and Post test of science students of experimental group



Research Hypothesis (H₂)

“CAI significantly affects the level of aspiration of art side B.Ed. students.”

Null Hypothesis (Ho₂)

“CAI don't affect the level of aspiration of art side B.Ed. students.”

Table 2.0
Showing the pre test-post test score analysis of Level of Aspiration of art students of experimental group

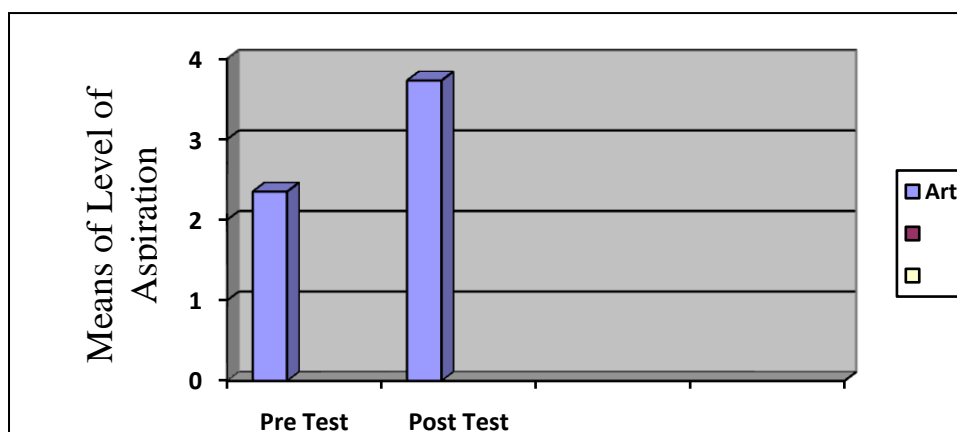
S. No.	Group of Students	No. of Student	Mean	S.D.	C-R Value
1.	Pre test scores	75	2.35	1.7	7.26 [significant at .01 level]
2.	Post test scores	75	3.73	2.1	

Table -2.0, denotes the mean value of pre test scores and S.D. of level of aspiration of art students is 2.35 & 1.7 and mean value of post test scores and S.D. of level of aspiration of art students is 3.73 & 2.1.. Difference between mean values of pre

test and post test achievement scores is 1.38 which is significant at .01 level of confidence.

Therefore the null hypothesis Ho₅ is rejected and research hypothesis H₅ that CAI significantly affects the level of aspiration of art side B.Ed. students is accepted.

Diagram showing the comparison of means of Level of Aspiration on Pre Test and Post test of art students of experimental group



Findings

The conclusions are follows.

- Results of the present study demonstrated that the mean value of post test score of level of aspiration of science students was more than mean value of pre test scores of level of aspiration of science students and mean difference was found significant at .01 level of significance.

Therefore null hypothesis (H₀₁) is rejected and research hypothesis (H₁) that CAI significantly affects the level of aspiration of science students, is accepted.

- It was found that the mean value of post test score of level of aspiration of art students is 3.67 and mean value of pre test scores of level of aspiration of art students was 2.48 and mean difference was found significant at .01 level of significance.

Therefore null hypothesis (H₀₂) is rejected and research hypothesis (H₂) that CAI significantly affects the level of aspiration of art students, is accepted.

Conclusions

Based on the analysis and interpretation of the data and the discussion on the results, the following conclusions can be drawn:

- CAI is a better method of instruction for Environmental Education of B.Ed. class as compared to the traditional method of instruction.
- Level of Aspiration of science and art students of B.Ed. was found significantly enhanced whether they were taught with CAI.

Recommendations

- Potential of computer assisted instruction should be utilized to enhance quality of education at college level.
- Prices of hardware should be lowered.
- Computer Assisted Instruction Journals should be purchased or subscribed for the libraries.
- In service teachers should be given computer literacy training through refresher courses. It is necessary to develop a culture for better utilization of computer in teaching learning process.

Educational Implications of the Study

Findings of the present study have a great implication for our educational system. The present traditional system of instruction is highly group oriented. Students are in a group for the purpose of instruction, irrespective of individual differences in their intellectual ability, motivation, interest and emotional development etc. Therefore individualize instructional process should be used to cater to the needs of individual learner. Findings of the study may

be a source of encouragement for the widespread use of CAI for the improvement of learner's level of aspiration and other psychological variables also.

Reference

- Best, John W. & Kahn, J. (2004), "Research in Education". New Delhi: Prentice Hall of India Pvt. Ltd.
- Chauhan, S.S. (1994). "Innovations in Teaching Learning Process". New Delhi: Vikas Publishing House.
- Chinwendu, Nwanne Stephen and Agommuoh Patience C (2017), "Computer Assisted Instruction (Cai) On Students' Interest And Achievement In Physics In Imo State, Nigeria". IOSR Journal of Research & Method in Education (IOSR-JRME) e-ISSN: 2320-7388,p-ISSN: 2320-737X Volume 7, Issue 3 Ver. IV (May - June 2017), PP 53-58 www.iosrjournals.org
- Garrett, Henry E. (2010), "Statistics in Psychology and Education". Ludhiana: Kalyani Publishers.
- Gautam, Neerja and Kaur, Jyotpreet (2015), "Effect Of Computer Assisted Instructions On Attitude Towards Environmental Pollution Of Secondary School Students." MIER Journal of Educational Studies, Trends & Practices May 2015, Vol. 5, No. 1 pp. 39 - 51
- Gupta, S. P. & Gupta, Alka (2005), "Statistical Methods in Behavioral Science". Allahabad: Sharda Pustak Bhawan.
- Koul, Lokesh (2004), "Methodology of Educational Research". New Delhi, Vikas Publishing house pvt. Ltd.
- Kulshrestha, S.P. (2005), "Fundamentals of Educational Technology". Agra: Vinod Pustak Mandir
- Mohammad, Adil Abdullah (2010), "Effectiveness of CAI on enhancing the classification skill in Second graders at risk for learning disabilities." Retrieved from www.google.com
- Pathak, P.D. (2003), "Educational Psychology". Agra: Vinod Pushtak Mandir.
- Serin. Oguz, Serin, Nerguz and Ozbas, L. Filiz, (2015), "The Effect of Computer-Assisted Science Instruction Attitude towards Science and the Computer." International Journal of New Trends in Arts, Sports & Science Education - 2015, volume 4, issue 3.
- Sharma, Rajesh and Nigam, Bhopendra (2003), "The role of Level of Aspiration on the Academic Achievement of the Secondary Students." Bhartiya Shiksha Shodh Patrika, (jan to june), pp. 37-39
- Sharma, R.A. (2010), "Environmental Education". Meerut: R. Lal Book Depot.
- Sharma, R.A. (2004), "Essentials of Measurement in Education and Psychology". Meerut: Surya Publication.
- Sharma, R. A. (2004), "Educational Technology". Meerut: Loyal Book Depot.
- Shukla, C. S. (2007), "Environmental Education". Lucknow: Alok Prakashan.
- Singh, Arun Kumar (2003), "Behavioral Methods in Psychology, Sociology and Education". Delhi: Motilal Banarasidas.