Effectiveness of Computer Supported Intervention on Interest in Science among Students with Learning Disability: Embracing Science and Inclusion in Research

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ABSTRACT *Studying in a regular school would be a win-win situation for each and every student, only if a divyang faces no head turning towards his unique behavior and others learn the lesson of empathy. The present study was conducted among the seventh and eighth grade students with learning disability, studying in the Government schools of Chandigarh. A sample of sixty four students with learning disability was taken and out of them, thirty two students were taught the subject of science through computer supported interventions and the other thirty two students were taught by normal class room, lecture based method. Pre-test and post-test experimental design was followed and the results were found to be significant at 0.05 level, in case of the experimental group. Thus the results indicate the strengthening of self paced learning and improved interest in science among students with learning disability.*

Keywords: *computer, learning disability, science, inclusion.*

Introduction

Technology can become the wings that will allow the educational world to fly farther and faster than ever before, if we will allow it – Jenny Ariedge.

Inclusivity should not only be a theoretical term but its appropriate application in the practical situation is must. This could be achieved by mainstreaming the differently abled children and providing them the cordial environment. The need is to understand that every child is unique and possesses his or her own style of grasping information and a little care can transform their lives. Computers and multimedia deals with multi-sensory approach in which maximum number of senses are involved in the learning process. Application of Communication technologies, hyperlinks and Multimedia Environments provides new ways to access the information and apply it in a better way. Jonassen P.(1999) conducted a study to acknowledge the constructivist use of computer technology in the school curriculum for the class assessment in education as an example of activity which is project based and the results revealed that the use of software in teaching supported the problem solving ability among the students and it also generated the interest of students in studies.

David J. Pucel (2005)administered the research work to compare the satisfaction level and overall performance of students with regard to two methods of instruction that is, web based instruction and the traditional classroom instruction based method. According to the results, not all the students reached the highest satisfaction level as par expected. Statistically it was found that there was no significant difference between the two instructional strategies experimented. İlhan, V.(2006) compared the motivation and attitude of the students who participated in classical lecture based and computer literacy course. According to the results, there was a significant effect of the mode of instruction on the level of motivation of the students, who were under the study. Cynthia C,et al.(2006) evaluated the efficiency of graphic organizer method of instruction on the comprehension and the recall of concepts of science among the students with learning disability. After the treatment was administered the effect of graphic organizer instruction was more and the students could recall and comprehend quickly. But when after two weeks the students were given the choice tasks then it was observed that there was no statistically significant difference between the mean scores of the two groups.

Objective

To study the effect of Computer supported interventions on Interest in Science among students with Learning Disability in Chandigarh.

Hypothesis

There will be no significant effect of Computer supported interventions on Interest in Science among students with Learning Disability.

Methodology:

The study was conducted among the seventh and eighth grade students with learning disability, studying in the Government schools of Chandigarh. A sample of sixty-four students with learning disability, studying in normal classroom under the scheme of inclusive education, was taken, by purposive random sampling technique. Out of these, thirty two students were taught the subject of science via computer supported interventions and the other thirty two students were taught by normal class room, lecture based instructions. Pre-test and post-test experimental design was followed in the study to assess the effectiveness of Computer supported intervention on Interest in Science among students with learning disability. The tools used in the study were **Science Interest Test (SIT)** by L.N.Dubey and Archna Dubey (2005) and Self constructed lesson plans based on computer assisted instructions for students with learning disability.

Procedure:

For data collection the following steps were followed during the study:

Stage I-The Pre-test on Interest in Science was administered on the students of Experimental group who were taught Science subject through Computer supported instructional method as well as on the students of Control group who were taught via normal classroom instruction method.

Stage II-Teaching Session: At this stage, Computer supported instructions specifically designed for the students with learning disability, were given to the students of Experimental group on the ongoing topics, from C.B.S.E syllabus affiliated science textbook for Class seventh and eighth.

Stage III- The Post-test on Interest in Science was administered on the students of Experimental group who were taught Science subject through Computer supported instructional method as well as on the students of Control group who were taught via normal classroom instruction method.

Matching the Groups:

Before applying the computer based interventional strategy, the sample of sixty four students was divided into two groups and the matching of groups was done for the pre test scores, to ensure that the level of equality of both the groups.

Table 1 showing Mean, Standard Deviation and t-values for Pre-test scores on Interest in Science of the experimental and the control group. (Matching the Groups)

Variable	Groups	Mean	Df	Standard Deviation	t-value
Interest in Science	**Experimental**	29.65	62	4.30	0.236
	Control	29.34		6.10	
t = 2.00 to be significant at 0.05 level and t = 2.66 to be significant at 0.01 level					

The Table 1 above shows that, the t-values for difference in mean scores of pre-test on Interest in science between the experimental and the control group was found to be 0.236. This value is neither significant at 0.01 level and nor at 0.05 level, which implies that the two groups does not differ significantly on Interest in science.

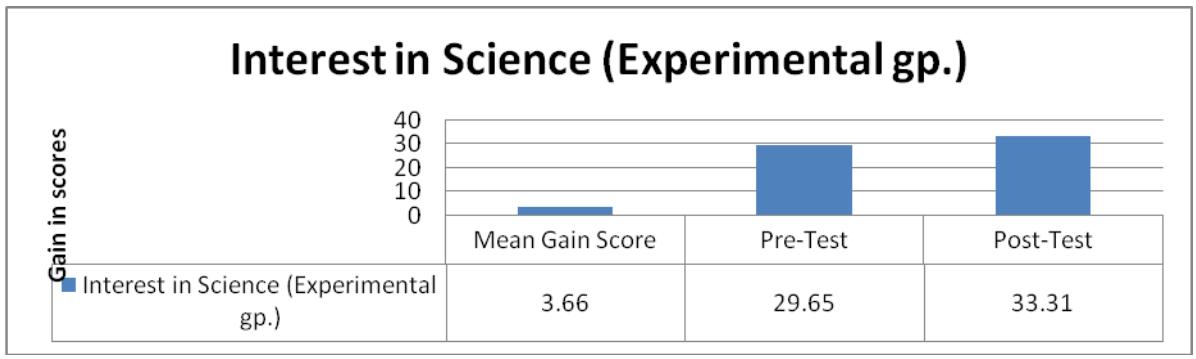
Results and Interpretation

The computer based intervention specially designed for the students with learning disability was given and after that the data collected was analyzed and interpreted for the results.

Table 2 showing Mean Gain Scores and Mean Scores (Pre-Test and Post-Test) for Interest in Science of the group taught through computer based learning method i.e. the experimental group (n=32)

Variable		Mean Scores	
	Mean Gain Scores	**Pre-test**	**Post-test**
Interest in Science	3.66	29.65	33.31

Graph 1 showing Mean Gain Scores and Mean Scores (Pre-Test and Post-Test) for Interest in Science of students in Experimental Group taught through computer based learning method (n=32)



The Table 2 above, shows that in case of the experimental group, the mean scores of the pre test were found to be 29.65 and the mean scores for the post test were 33.31. out of these values the mean gain scores which were found were 3.66. These are a considerable amount of scores, which shows that the intervention has an impact on the students of the experimental group. These values are also depicted graphically in the graph 1 given above.

Table 3 showing Mean Gain Scores and Mean Scores (Pre-Test and Post-Test) for Interest in Science in Control Group (n=32)

Variable		Mean Scores	
	Difference in Scores	Pre-test	Post-test
Interest in Science	0.09	29.3	29.2

The table 3 given above shows that there is no significant difference between the mean scores of pre-test and the post-test for the control group, which was not taught through computer based learning method.

Inferential statistics

The t- test was applied to determine the significance of difference between the mean gain scores of experimental and control group on Interest in science on the students with learning disability and the hypothesis was tested on the basis of t-test applied to the mean gain scores of experimental group taught through computer based learning and control group taught through normal classroom lecture based learning.

Table 4 showing the t-values for significance of difference between pre-test and post test scores of the experimental group.

Variable	Test	Mean scores	df	Standard Deviation	t-value
Interest in Science	**Pre-test**	29.65	64	4.30	2.14 *
	Post-test	33.31		8.60	

t = 2.00 to be significant at 0.05 level.
t = 2.66 to be significant at 0.01 level.
*Significant at 0.05 level
**Significant at 0.01 level

The Table 4, above shows that t-value of 2.14 on Interest in science has been found to be significant at 0.05 level. Hence, the null hypothesis "There will be no significant effect of Computer supported interventions on Interest in Science among students with Learning Disability" was rejected.

Findings and Conclusion:

The results of the present study reveal that the students, with learning disability taught through Computer based learning method performed significantly better on the variable of Interest in Science, than the students taught through Normal classroom lecture based learning method. And there was no significant difference found between the scores of the group taught through normal classroom lecture based learning method.

Educational implications

The results of the present study hold implications for the teachers, school administration, curriculum framers and the policy makers. The school authorities should adopt such curriculum, in which the students discuss the concepts among themselves while understanding the computer based presentations on the related topic, so that the interest of the students with learning disability can develop through computer based learning method.

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The world is the great gymnasium where we come to make ourselves strong.
~ Swami Vivekananda