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Effect of Educational Software on Learning Addition among Children with Slow Learner

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Abstract – Computer will never replace teacher but the effective use of computers enhance the desired learning. Technology is a must to reach international standards in education. As said by our finance minister P. Chidambaram, we are 30 years behind in technology when compared to the developed countries. This will affect the growth of the nation. We are now happy that we launched the EDUSAT in the orbit on September 20, 2004. This is not the end. But there is a long way to go before reaching excellence in the international scenario. Let us strive for creating high-tech classrooms to make our children have global outlook.

Present study favors that computer technology application in special education can accelerate the appropriate development of exceptional children. By using appropriate software programme the special educators can handle these children in a proper way. Children can learn with their own capacity and speed. The computer technology can be helpful in implementing individualized education programme for students with disabilities. The teacher and student both can make self-evaluation and determine the goal achievement. Future technological advances can enable the educators to analyze and track the impaired student's development much greater precision than is now possible and to use this information in plan appropriate instruction for the impaired students and to use this information in planning appropriate instruction for special needy children.

Keywords – Children, Educational Software, Slow Learners

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INTRODUCTION

A disability refers to personal limitations that are of substantial disadvantage of the individual when attempting to function in society. A disability should be considered within the context of the individual's environmental and personal factors, and the need for individualized supports.

Intelligence refers to a general mental capability. It involves the ability to reason, plan, solve problems, think abstractly, comprehend complex ideas, learn quickly, and learn from experience, although not perfect intelligence is represented by intelligent quotient scores obtained from standardized tests given by a trained professional.

Slow learner is one, who is unable to learn what the average child learns in the normal classroom. Slow learners are also called as "Backward Children". Their IQ ranges from 70 to 90. They are normal in their behaviour and appearance also. Their academic achievement is low when compared with that of normal children especially reading, writing and arithmetic.

Computers and other technology applications help the slow learner in all academic areas. Today's different kinds of software help with tutoring, drill, simulation, and practice activities. Technology is very useful because it is self-pacing and individualized and increases time on task. With its sound and color effects, it is very motivating to the slow learner (Smith, Polloway, Patton & Dowdy, 2007)

These are just a handful of techniques that may help slow learners achieve academic success. What is important in the education of slow learners is that teachers evaluate and understand the individual needs of each student and use appropriate teaching strategies that will maximize the education outcomes of this population of students.

Computer Assisted Instruction is a kind of individualized instruction administered by a computer. The computers that are programmed to guide students through lessons at students own pace can help in accommodating student differences. Computer Assisted Instruction has its root in programmed instruction hand in the behavioral theories of learning. According to these

theories, learning is accelerated by the use of controlled presentation of stimuli followed by reinforcement based upon the learner's responses.

Computer can be used to deliver instruction effectively and efficiently. In computer assisted instruction, students interact with the content through instructional software, or lessons delivered by the computer. CAI programmes can be made available for every subject area.

In CAI, the computer interacts directly with the learner. The computer is used to presented lessons and gives instruction to learner. Then learner interacts by giving appropriate responses to the programmed questions.

Importance of CAI

CAI enhances student's attitudes toward several aspects of schooling. Some researchers took these investigators a step further by asking students what it is about CAI that they like. The following is a list of reasons given by students for liking CAI activities and/or favoring them over traditional learning. These student's preferences also contribute to our understanding of why CAI enhances achievement.

Students say, they like working with computers because computer:

- Are infinity patient
- Never get tired
- Never get frustrated or angry
- Allow students to work privately
- Never forget to correct or praise
- Are fun and entertaining
- Individualize learning
- Are self-paced
- Do not embarrass students who make mistakes
- Make it possible to experiment with different options
- Give immediate feedback
- Are more objective than teachers
- Free teachers for more meaningful contact with students
- Are impartial to race or ethnicity
- Are great motivators
- Give a sense of control over learning
- Call for using sight, hearing and touch
- Teach in small increments
- Help students improve their spelling
- Build proficiency in computer use, which will be valuable later in life
- Eliminate the drudgery of doing certain learning activities by hand (e.g., drawing graphs)

Justification of the study

The challenges for educators regarding teaching various concepts to children are as old as education. Various strategies have been used to teach the children with slow learner. This topic is expected to throw light on the effects of educational software on learning addition among children with slow learner. The finding will be useful to develop more packages to teach the concept to special children and create awareness on this in special education.

CAI cannot replace the teacher. Special teacher works hard not only in teaching but record maintenance also. Due to lack of concentration and retention these children need repetition. Sometimes repetition prevents motivation and interest in children as well as teachers. The main method of teaching in special education is individual instruction. If the children use CAI as a self-instructional material it can be very useful for the children with slow learner.

There is dearth of research in this area. Therefore, it was felt that the study could make a significant contribution in special education to use educational software to teach the concept of addition. Purpose of the present study is, to find out whether CAI is more effective than traditional way in teaching addition among children with slow learner.

OBJECTIVES:

- To find out the effect of educational software in teaching addition among children with slow learner.
- To find out the effect of traditional method in teaching addition among children with slow learner.
- To compare the effect of educational software and traditional method in

teaching addition among children with slow learner.

RESEARCH DESIGN

An experimental method was used to examine the effects of educational software in learning addition among children with slow learner. There is one dependent variable in this study i.e. learning addition. The experimental design for the study is the quasi-experimental design where pre and post test are conducted in the experimental design. Eight students in sample were selected by lottery system and students were assigned groups into control and experimental. Each group consisted of 4 students. They were intervened for fifteen sessions and the performance was evaluated. Mean and standard deviation were calculated for pre test score and post test score. In case of dependent variable mean was compared between the two groups.

Sample

The sample selected for this study consisted of eight students with slow learner age group between 8-13 years studying in center for learning disorder at Sweekaar-upkaar complex, Secunderabad. Pre-pre test was conducted as eligibility criteria. Out of total 16 students there were 12 students who achieved 80 % or above score in pre-pre test. 8 students were selected randomly out of 12. The total eight samples were divided into two groups as control and experimental through lottery system. Students in the control group C1, C2, C3, C4 and students in the experimental group are named as E1, E2, E3 and E4. With in the sample of 8 students there were 1 girl and 7 boys. Researcher informed the parents of children and got the permission for selecting the subjects in study. Profile of the samples has been given.

Table 4

Profile of the samples

Sample	Age	I.Q.	Sex
E1	13 yrs.	77	M
E2	8 yrs.	71	F
E3	10 yrs.	72	M
E4	8 yrs.	80	M
C1	12 yrs.	75	M
C2	9 yrs.	75	M
C3	10 yrs.	76	M
C4	13 yrs.	90	M

Tool

Two measuring instruments were used during the study. First checklist was developed for pre-pre test consisted 7 items as eligibility criteria. It has total 35 marks. 80 % or above was the eligibility criteria. Second checklist was used to assess the current level of the students on concept of addition. There are total 16 items of total 80 marks. Same checklist served as the performance record sheet for students in respective areas. The checklist was given to 8 professional to test reliability. The performance was in the form of codes (PP, VP, GP, C, I) and score in numbers (1, 2, 3, 4, 5) respectively. PP for Physical prompt, VP is Verbal prompt, GP for Gesture Prompt, C for cue is require to perform the activity and if student performs activity with 80 % accuracy that means independent. Sample checklists are enclosed in the Appendix: B-(B1, B2) respectively. Checklist for teaching addition has the provision to record the performance daily after intervention.

Materials

Students in experimental group were instructed through computer assisted instruction on computer. Educational software was used for the study. Addition Magic and Color Quiz software is educational software. The software is used for learning mathematics to the students. Addition magic is used for teaching Addition.

The control group was taught in traditional way with flash cards, pictures, charts and models. Teacher teaches through verbally and gives the problems to solve the sums. Teacher shows the numerical to the students and tells the problems.

Data collection procedure

The data was collected both of experimental and control group before conducting the experiment. A pre-pre test was conducted to ascertain the pre requisite skills of the children with slow learner of Sweekaar. A total number of eight students were found to have the pre requisite skills to learn through CAI. A pre test was conducted and the scores were recorded. The total sample were divided into experimental and control group through lottery system. The experimental group was given intervention in the computer room of C.L.D. section. The intervention consists of 60 min. and 15 consecutive working days. The researcher has given the training individually on a one to one basis to all the sample. Simultaneously the groups were also intervened by the research with traditional method that is teaching addition skills by drowning lines in their notebooks. The control group was also given 60 min. and 15 sessions. After the 15 sessions post test were conducted for both experimental and control group. The data collected through pre test and post test with tabulated and statistical analysis was used. In experimental group, students were instructed on computer with Addition Magic software and simulation CAI. First, they were taught addition concept through simulation and software was used to practice and learning by doing themselves.

RESULTS & DISCUSSION

Introduction

The present chapter deals with analysis of data. The data was collected from 8 samples, 4 from control group and 4 from experimental group. The data was analyzed by using SPSS (Statistical Package for Social Science) and the results were interpreted and tabulated.

Test scores:

It included the pre and post test for children and finally comparison of the mean score of each group and with in the group. During interpretation t-test was conducted for groups and level of significance was observed at 0.05 levels.

Pre test scores:

For learning addition pre test scores were calculated to find any significant difference in two groups selected. It was scored on the basis of performance in assessment sheet. Score were calculated out of 80. Mean score of both experimental and control group were found. T-test was done to find any significant difference in student's performance.

Post test scores:

Similarly, Post test scores were calculated, every student was evaluated on record sheet basis on daily performance and scores were found. Scores were calculated out of 80. Mean score of both experimental and control group in post test were found. T-test was done to find any significant difference in student's performance.

Summary of the result

Data collected for the control and experimental groups have been analyzed individually and in groups based on entry – level performance, daily basis gain in learning during intervention. The pre test of both the groups did not have any significant difference. Gain in learning during intervention has been analyzed individually and in groups based on pre test and post test performance data. The experimental group gained more in Learning Addition than the control group.

Students of experimental group showed more interest in learning their respective task. When the children asked to computer session children were very happy and motivated. Since, many of them working for the first time on computers, they were zealous towards the usage. They showed interest and happiness when they have seen the colored beautiful computer window display.

Control group also performed well. They were also motivated and interested when they were taught with attractive flash cards and material in class room but experimental group's achievement was more than control group.

DISCUSSION

The present study purposed to study the effects of educational software on the learning of number concepts with specific reference to skills in addition. A total number of eight children between the age group of 8 to 13 and having I.Q. between 70 to 90 were been considered sample of the study. The experimental group intervention was given with the help of computer software to improve their number concepts where as the control group got training in traditional method of learning number concept. Both the pre and post test were implemented and the scores were recorded for analysis. The findings of the study show the increasing score of both the groups. Experimental group's percentage score has been increased 50% as well as Control group's percentage score has been increased 40% after intervention. Experimental group has been taught through educational software and control group has been taught through flash cards and other learning materials. The software was very effective to learn addition for experimental group. It shows the effect of educational software on learning addition.

FINDINGS

- The students of experimental group who were taught through educational software were found more improvement in learning the concepts than the control group.
- The researcher observed that experimental group. Students showed more attention, concentration and interest in learning than the control group. It has not been measured as a part of the study.
- The students need more sessions to operate the system independently.

SUMMARY & CONCLUSSION

Study is conducted to know the effectiveness of educational software vs. traditional teaching and whether these children can operate the system as a self-instructional material independently.

Review of the related literature shows that there has been a dearth of such researched in India. There are very few researches done to prove effectiveness of educational software for children with slow learner.

The study shows the effects of teaching children with slow learner through educational software on computer. Both the teachings are found effective but educational software is more effective than the conventional way of teaching.

Educational software CAI gives space to children to learn at their pace. Students were very creative and innovative during the intervention sessions. Children became familiar in basic operating skills as switch on and off the CPU, monitor and speaker by seeing the light and making volume high and low of speaker and also main parts of computer as monitor, CPU, mouse, speaker and insert CD into CD ROM with learning addition through CAI etc. it shows these children can learn through computer assisted instructions as a self-instructional material if they are exposed in the classroom by a special teacher or at the home by parents.

This study favors and emphasis educational software CAI to teach children with slow learner. This study stands with this statement "Most programmes of computer based instruction evaluated in the past". Wrote kulik and kulik in 1987 "have produced positive effects on students learning and attitudes. Further programmes for developing and implementing computer based instruction should therefore be encouraged". Present study also favors this statement of kulik.

LIMITATIONS

- Very few students with slow learner enrolled with sweekaar. Therefore generalization of the findings may be difficult.
- The teaching-learning atmosphere is also not very conductive as the class room is not very specious.
- Computer software to teach addition skills to children with intellectual disability is very limited.
- As the period is not very much suitable is one of the major limitation.

RECOMMENDATION

The study shows that teaching through educational software is more effective in learning addition among slow learner children. Based on this result the following suggestions were made:

- Research appropriate software can be developed.
- Concepts, which may be taught through educational software also can be listed and tested.
- This study can be conducted for different groups of children belong to various level of intelligence, age group, socio economic status and educational background.
- Children should be exposed as a self-instructional material in the classroom by a special teacher and at the home by parents.
- Educational software may lead job perspective in future as a computer operator or as a helping hand in computer hardware field.
- Educational software instruction will be helpful in inclusive education.
- More than two choice situations should be there in present software.

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