A Study of Impact of CAI on the Development of Skills in Children with Mental Retardation

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ABSTRACT

The main purpose of the study is to be compare the mean scores of experimental and control groups before training and after training. A sample of 100 students (50 students of experimental group and 50 students of control group from gurugram district was taken. For data collection, Case History Performa developed by the researcher herself, Behavioural Assessment Scale for Indian children with mental retardation (BASIC-MR) by Peshawariya and Venkatesan and Computer Assisted Instruction software developed by NIMH. The mean, standard deviation and t-test were used for analyze the data. Thefindings of the study revealed that there was no significant difference between experimental group and control group before training but, there was a significant difference between experimental group and control group after training in relation totheir developmental skills.

Keywords: CAI, Development Skills, Mental Retardation

INTRODUCTION:

Computer-assisted instruction is a method of instruction in which there is a purposeful interaction between a learner and the computer device (having useful instructional material as software) for helping the individual learner achieve the desired instructional objectives with his own pace and abilities at his command.

Computer Assisted Instruction and Computer Aided Learning are two sides of a similar coin. Instructions, lessons, syllabus and every single each thing composed made or intended

to be passed on to the student using computers is known as Computer Assisted Instruction or CAI. The utilization of these instructions using computers by the students is known as Computer Aided Learning. The quality and quantum of advantage the student can get from the same is directly related to with the quality and content of CAI.

Definition of CAI:

Acc. to Bhatt and Sharma: "CAI is an interaction between a student, a computer controlled display and a response entry device for the purpose of achieving educational outcomes".

Technologies of CAI

Computer-assisted instruction requires a joint effort of various persons in the matter of wise handling of men and material resources. Generally, it involves three types of technologies, namely hardware, software and courseware.

1. HARDWARE

The computer as a machine represents the hardware. In CAI, we certainly need an appropriate computer to suit our teaching-learning situation. It will require the services of an expert or technician for its maintenance.

2. SOFTWARE

The computer cannot do anything for imparting instruction to the learners if it is not fed with the software. The programmes-containing instructions to the computer in a language that it can understand are called software. The software used in CAI is of two kinds: (i) application software and (ii) system software.

3. COURSEWARE

The courseware technology is the base of the instruction that is imparted to the learner by CAI. In courseware technology requires (i) experts in the subject, (ii) in the methodology and strategies of teaching the subject, (iii) in instructional psychology, and (iv) in audio-visual aid preparation and use.

The main purpose of a CAI programme is to provide individual instruction to students keeping in view their personal abilities and interests. A special device is needed for this purpose. This device should be so flexible as to store huge amounts of organized information,

on the one hand, and on the other hand, to provide the use with the selected information when he needs it. Computers fulfil these two conditions, which is why they are used for the task of providing instructions to students.

Thus, CAI may be defined as the use of computers as an integral part of an instructional procedure in which the learner is engaged in two-way interaction with the computer via a terminal.

MEANING OF MENTAL RETARDATION:

Mental retardation is a permanent condition characterized by sub average intelligence, which causes limitations in learning and adaptive functioning. Individuals with mental retardation may be able to live independently in the community and obtain various levels of employment, depending on the level of severity; as severity increases, the need for training and support may be required to complete even simple, daily tasks.

Definition:

The American Psychological Association has defined mental retardation (Mental Deficiency) "as significantly sub average general intellectual functioning existing concurrently with deficits in adaptive behaviour and manifested before the age of 18".

According to Tredgold (1937) "it is a state of incomplete mental development of such a kind and degree that the individual is not capable of adopting himself to the normal environment of his fellow in such a way to maintain existence independently of supervision, control or external support."

The WHO (1954) defined it as "incomplete or insufficient general development of mental capacities".

The American Association of Mental Deficiency refers "to mental retardation as significantly sub average in general intellectual functioning existing currently with deficits in adaptive behaviour and manifested during the developmental period**."**

Causes of Mental Retardation:

- Heredity

- Turner's Syndrome

- Inherent Defects

- Metabolic And Nutritional Disorders

- Phenylketonuria (PKU)

- Gestational Factors

- Lead Poisoning

- Rubella

- Infection And Intoxication

- Mother- Fetal Blood Group Incompatibility

- X-Ray, Birth Injuries And Trauma

- Brain Disease

- Deprivation

- Preventive Measures

OBJECTIVES OF THE STUDY:

The objective of the present study:

- To compare the motor functioning level of experimental and control groups before training.

- To compare the academic level of experimental and control groups before training.

- To compare the communication level of experimental and control groups before training.

- To compare the motor functioning level of experimental and control groups after training.

- To compare the academic level of experimental and control groups after training.

- To compare the communication level of experimental and control groups after training.

HYPOTHESES OF THE STUDY:

- There is no significant difference between experimental and control groups in relation to their motor functioning skill before training.

- There is no significant difference between experimental and control groups in relation to their academic level before training.

- There is no significant difference between experimental and control groups in relation to their communication skill before training.

- There is a significant difference between experimental and control groups in relation totheir motor functioning skill after training.

- There is a significant difference between experimental and control groups in relation totheir academic level after training.

- There is a significant difference between experimental and control groups in relation totheir communication skill after training.

METHODOLOGY: Descriptive method is used by the researcher for the present study.

SAMPLE: The sample of the present study comprised of 100 students from the Govt. and private school studying in Gurgaon district of Haryana by using simple random sampling technique.

VARIABLES:

Dependent Variable: Computer Assisted Instruction.
Independent Variable: Motor Functioning, Academic level and Communication level of mentally challenged.

TOOL USED:

- Case History Performa developed by the researcher herself.

- Behavioural Assessment Scale for Indian Children with Mental Retardation (BASIC-MR) by Peshawariya and Venkatesan.

- Computer Assisted Instruction Software developed by NIMH.

STATISTICAL TECHNIQUES USED: In the present study, following statistics techniques are used:

Mean

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Standard Deviation

T-test

ANALYSIS AND INTERPRETATION:

Table – 1

Comparison of mean scores of experimental group and control group with reference to their certain Demographic Variables in pre-test phase

Variables	Categories	N	Mean	S.D.	t-value	Level of significance	Remarks
motor functioning skill	Experimental	50	**57.33**	**6.44**			**Not Significant**
	Control	50	**55.46**	**5.38**	**1.59**	**0.05**	
academic level	Experimental	50	**60.11**	**7.54**			**Not Significant**
	Control	50	**61.27**	**8.02**	**0.74**	**0.05**	
communication skill	Experimental	50	**56.94**	**6.83**			**Not Significant**
	Control	50	**58.73**	**7.21**	**1.27**	**0.05**	

From Table-1 it is inferred that the mean scores of experimental and control groups in relation to their motor functioning skill before training are 57.33 and 55.46 and values of S.D. are 6.44 and 5.38 respectively. The calculated t-ratio between the mean scores is 1.59 which is not significant at 0.05 levels of significance. Hence, the null hypothesis H_0 "There is no significant difference between experimental and control groups in relation to their motor functioning skill before training" is accepted.

From Table-1 it is inferred that the mean scores of experimental and control groups in relation to their academic level before training are 60.11 and 61.27 and values of S.D. are

7.54 and 8.02 respectively. The calculated t-ratio between the mean scores is 0.74 which is not significant at 0.05 levels of significance. Hence, the null hypothesis H_0 "There is no significant difference between experimental and control groups in relation to their academic level before training" is accepted.

From Table-1 it is inferred that the mean scores of experimental and control groups in relation to their communication skill before training are 56.94 and 58.73 and values of S.D. are 6.83 and 7.21 respectively. The calculated t-ratio between the mean scores is 1.27 whichis not significant at 0.05 levels of significance. Hence, the null hypothesis H_0 "There is no significant difference between experimental and control groups in relation to their communication skill before training" is accepted.

Table – 2

Comparison of mean scores of experimental group and control group with reference to their certain Demographic Variables in post-test phase

Variables	Categories	N	M	S.D.	t-value	Level of significance	Remarks
motor functioning skill	Experimental	50	**61.12**	**7.88**			
	Control	50	**55.43**	**6.92**	**3.87**	**0.05**	**Significant**
academic level	Experimental	50	**71.92**	**8.20**			
	Control	50	**62.88**	**5.67**	**6.45**	**0.05**	**Significant**
communication skill	Experimental	50	**66.54**	**7.49**			
	Control	50	**59.16**	**6.93**	**5.12**	**0.05**	**Significant**

From Table-2 it is inferred that the mean scores of experimental and control groups in relation to their motor functioning skill after training are 61.12 and 55.43 and values of S.D. are 7.88 and 6.92 respectively. The calculated t-ratio between the mean scores is 3.87 whichis significant at 0.05 levels of significance. Hence, the null hypothesis H_0 is rejected and

alternative hypothesis "There is a significant difference between experimental and control groups in relation to their motor functioning skill after training" is accepted.

From Table-2 it is inferred that the mean scores of experimental and control groups in relation to their academic level after training are 71.92 and 62.88 and values of S.D. are 8.20 and 5.67 respectively. The calculated t-ratio between the mean scores is 6.45 which is significant at 0.05 levels of significance. Hence, the null hypothesis H_0 is rejected and alternative hypothesis "There is a significant difference between experimental and control groups in relation to their academic level after training" is accepted.

From Table-2 it is inferred that the mean scores of experimental and control groups in relation to their communication skill after training are 66.54 and 59.16 and values of S.D. are 7.49 and 6.93 respectively. The calculated t-ratio between the mean scores is 5.12 which is significant at 0.05 levels of significance. Hence, the null hypothesis H_0 is rejected and alternative hypothesis "There is a significant difference between experimental and control groups in relation to their communication skill after training" is accepted.

FINDINGS OF THE STUDY:

- There is no significant difference between experimental and control groups in relation to their motor functioning skill before training.

- There is no significant difference between experimental and control groups in relation to their academic level before training.

- There is no significant difference between experimental and control groups in relation to their communication skill before training.

- There is a significant difference between experimental and control groups in relation totheir motor functioning skill after training.

- There is a significant difference between experimental and control groups in relation totheir academic level after training.

- There is a significant difference between experimental and control groups in relation totheir communication skill after training.

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CONCLUSION: It can be concluded from the results that there is no significant difference between experimental and control groups in relation to their developmental skills before training but it can be noted that after training, there is a significant difference between experimental and control groups in relation to their developmental skills.

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