ATTITUDE OF SECONDARY GRADE TEACHERS TOWARDS COMPUTER ASSISTED INSTRUCTION

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ABSTRACT

This investigation is intended to know the level of attitude of secondary grade teachers towards Computer Assisted Instruction (CAI). Also, this study tries to know the different factors influencing the attitude of the teachers towards CAI. The investigator used a self-prepared tool and it was administered with the secondary grade teachers who are residing at different parts of Salem district. Further, appropriate statistical techniques were used for the data analysis and findings.

INTRODUCTION

Learning process is a special process where different levels of learners are accommodated in a learning sphere in an individualized manner. Many attempts were being made by researchers to explore the methods to drive the intended knowledge at different learning levels and the outcomes of such researches showed that there are varied levels of attainment of learning targets among the learners. To meet the learners with their needs and to make the learning productive and meaningful, the role of teachers with modern methods of teaching plays a vital role in this digital era. Consequently, traditional teachers are having replaced by e-teachers, who are the new generation of teachers who will work both in a regular as well as a virtual environment. The introduction of CAI in the classroom environment has made successful changes in the process of education.

COMPUTER ASSISTED INSTRUCTION

The use of computers in education started in the 1960's. With the advent of convenient microcomputers in the 1970's, computer use in the school has become widespread from primary education through university education. Instructional computers either present information or fill a tutorial role, testing the students for comprehension. Computer Assisted Instruction (CAI) is a program of instructional material presented by means of a computer or computer system.

Computer programs are interactive and can illustrate a concept through attractive animation, sound, and demonstration. They allow students to progress at their own pace and work individually or problem solve in a group. Computers provide immediate feedback, letting students know whether their answer is correct. If the answer is not correct, the program shows students how to correctly answer the question. Computers offer a different type of activity and a change of pace in learning from teacher-led or group instruction. Computers capture the students' attention because the programs are interactive and engage the students' spirit of competitiveness to increase their scores. Also, computer-assisted instruction moves at the students' pace and usually does not move ahead until they have mastered the skill. Programs provide differentiated lessons to challenge students who are at risk, average, or gifted.

INSTRUCTIONAL APPLICATIONS OF COMPUTERS

Computers are being increasingly employed for class room instruction as also individualised and distance education. Computer Based Instruction (CBI) is variously known as Computer Aided Learning (CAL) in the UK and Computer Assisted Instruction (CAI) in the USA. Either of these refers to on- line direct interactive learning experience through the computer. It can be done in one of the different modes of instruction, which are:

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- Tutorial Mode
- Drill and Practice Mode
- Simulation Mode
- Gaming Mode

NEED FOR THE STUDY

It is a well known fact that not a single teacher is capable of giving up to date and complete information in his own subject. ICT provides variety in the presentation of content. Computer Assisted Instruction (CAI), as one of the instructional methods which helps learners in concentration, better understanding and long retention of information which is not possible otherwise. Also, CAI provides more flexibility to learners which are not given in the traditional method and process. To implement the new concept or method in any area, it is important to know the current status of the receiver and implementer. This study deals with the attitudes of secondary grade teachers towards one of the instructional strategies namely CAI so as to make the required attitudes which will help them to implement the innovative teaching technology for their students in future successfully.

OBJECTIVES

- To study the level of the attitude of secondary grade teachers towards Computer Assisted Instruction.
- To study the factors influencing the attitude of secondary grade teachers towards Computer Assisted Instruction.

METHODOLOGY

The researcher adopted the survey method for this investigation.

SAMPLING TECHNIQUE

Data was collected from 300 government school teachers who are currently undergoing B.Ed., Programme in distance mode and who are residing in Salem district. For this study, the investigator used the stratified random sampling technique.

TOOL EMPLOYED

The investigator developed an attitude scale which was standardized by subject experts. This tool consists of two parts, namely Personal Information Part (Part A) and Attitudes of Secondary Grade Teachers towards CAI Part (Part B). Part B consists of 25 items, out of which 18 items are positive and the remaining 7 items are negative. It uses a five point rating scale for the purpose of scoring. Numerical weightage was given to each of the five categories of response viz, Strongly Agree, Agree, Undecided, Disagree and Strongly Disagree.

STATISTICAL TECHNIQUE USED

Obtained scores were analysed by descriptive and inferential analysis to estimate the attitude of secondary grade teachers towards CAI.

ANALYSIS AND INTERPRETATION OF DATA

The data collected were subjected to descriptive analysis as well as inferential analysis. From the responses of the sample, the following interpretations made :

Table 1

MEAN DIFFERENCE IN THE ATTITUDE OF SECONDARY GRADE TEACHERS TOWARDS CAI BASED ON THEIR GENDER, RESIDENCE, SUBJECT AND KNOWLEDGE OF COMPUTER.

Sl. No.	Factors	Sub - Factors	N	Mean	Standard Deviation	t-value	Remark
1	Gender	Male	143	104.77	9.6		
		Female	157	92.87	8.22	11.57	$p < 0.01$
2	Residential Background	Rural	135	89.83	7.12	18.86	$p < 0.01$
		Urban	165	105.67	7.32		
3	Subject studied in degree level	Arts	138	90.3	7.46	17.52	$p < 0.01$
		Science	162	105.56	7.58		
4	Knowledge of computer	Yes	170	105.49	7.34	19.25	$p < 0.01$

From Table 1, it is clear that the t-value for the attitude of secondary grade teachers towards CAI in terms of gender is 11.565 which is significant at 0.01 level with df = 298. It shows that the attitude of male and female secondary grade teachers differs significantly. Further, the mean value of the scores for the attitude of male teachers

is 104.77 which is significantly higher than that for female teachers whose mean value is 92.87. It may therefore be said that the attitude of male teachers towards CAI was found to be higher than that of female teachers.

From Table 1, it is clear that the t-value for the attitude of secondary grade teachers towards CAI in terms of residential background is 18.859 which is significant at 0.01 level with df = 298. It indicates that the attitude of teachers belonging to rural and urban residential background differs significantly. Further, the mean value of the scores of the attitude of teachers belonging to urban areas is 105.67 which is significantly higher than that for teachers belonging to a rural background, whose mean value is 89.83. It may therefore be said that the attitude of teachers belonging to an urban background towards CAI was found to be higher than that of the teachers who belong to a rural background.

From Table: 1, it is evident that the t-value for attitude of secondary grade teachers towards CAI who studied a science subject is 17.517 which is significant at 0.01 level with df = 298. It implies that the attitude of arts and science teachers differs significantly. It may therefore be said that the attitude of teachers with a science discipline was found to be higher than that of the teachers with an art discipline. Also, it is found that the mean value of marks scored by the teachers with a science discipline is comparatively higher than that of the teachers with an art discipline.

From Table 1, it is clear that the t-value of the for scores for the attitude of secondary grade teachers with and without computer knowledge is 19.251 which is significant at 0.01 level with df=298. It shows that the attitude of teachers with and without computer knowledge differs significantly. Further, it indicates that the mean scores for the attitude of teachers with computer knowledge is 105.49 which is found to be higher than that of the teachers who are not having computer knowledge, whose mean score is 89.45. It may therefore be said that the attitude of secondary grade teachers towards CAI who are having knowledge of computer was found to be higher than that of the teachers who are not having computer knowledge.

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Table 2

SUMMARY OF ANOVA FOR THE ATTITUDE OF SECONDARY GRADE TEACHERS TOWARDS CAI

Source of Variance	Degrees of Freedom	Sum of Square	Mean Square	F-value	Remarks
Between Groups (Age Limit)	2	22526.2	11263.1	285.9	$p < 0.01$
Within the Groups (Age Limit)	297	11700.3	39.395		

From Table 2, it is evident that F-value is 285.903 which is significant at 0.01 with df=2/297. It indicates that the attitude of secondary grade teachers belonging to 25 to 35, 36 to 45 and 46 and above age groups differs significantly. To identify the group with a comparatively high attitude, the data was further analyzed with the help of t-test.

Table 3

MEAN DIFFERENCE IN THE ATTITUDE OF SECONDARY GRADE TEACHERS TOWARDS CAI BASED ON THEIR AGE

Age Group	Number	Degrees of Freedom	Mean	Standard Deviation	t-value	Remarks
25 – 35	118	214 (1,2)	108.35	5.75	14.057	$p < 0.01$
			96.4	6.75		
36 – 45	98	200 (1,3)	118.35	5.75	24.514	$p < 0.01$
			87.25	6.41		
46 and above	84	180 (2,3)	96.4	6.75	9.325	$p < 0.01$
			87.25	6.41		

From Table 3, the t-value for 25 to 35 and 36 to 45 age group teachers' attitudes is 14.057 which is significant at 0.01 level with df=214.It shows that mean scores of these two groups differ significantly; the t-value for 36 to 35 and 46 and above group teachers' attitudes is 24.514 which is significant at 0.01 level with df=200.

It implies that the mean scores of these two age groups differ significantly; and the t-value for 25 to 35 and 46 and above age group teachers' attitudes is 9.325 which is significant at 0.01 level with df=180. It shows that the mean scores of these two groups differ significantly. On comparing the mean scores of attitudes of these three groups, 25 to 35 group teachers were found to be having a significantly higher level of attitude than the teachers of the other two groups. On comparing the teachers of the two groups, the 36 to 45 age group teachers were found to be having a higher level of attitude than the 46 and above age group teachers. It may therefore be said that the level of attitude of teachers who belong to the 25 to 35 age group was found to be the highest.

Table 4

SUMMARY OF ANOVA FOR THE ATTITUDE OF SECONDARY GRADE TEACHERS TOWARDS CAI

Source of Variance	Degrees of Freedom	Sum of Square	Mean Square	F-value	Remark
Between Groups (Educational Qualification)	2	23061.06	11530.53	306.711	$p < 0.01$
Within the Groups (Educational Qualification)	297	11165.46	37.594		
Total	299				

From Table 4, it is evident that F-value is 306.711 which is significant at 0.01 with df=2/297. It reflects that the attitude of secondary grade teachers with UG, PG and M.Phil Educational Qualification differs significantly. To identify the group with higher attitudes among these three groups, the data were further analyzed with the help of t-test.

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Table 5

MEAN DIFFERENCE IN THE ATTITUDES OF SECONDARY GRADE TEACHERS TOWARDS CAI BASED ON THEIR EDUCATIONAL QUALIFICATION

Educational Qualification	Number	Degrees of Freedom	Mean	Standard Deviation	t-value	Remarks
UG	113	228 (1,2)	88.32	6.49	14.994	$p < 0.01$
			101.08	6.42		
PG	117	181 (1,3)	88.32	6.49	24.871	$p < 0.01$
			110.78	4.91		
M.Phil.	70	185 (2,3)	101.08	6.42	10.876	$p < 0.01$
			88.32	4.91		

From Table 5, the t-value for the attitude of the teachers with UG and PG educational qualification is 14.994 which is significant at 0.01 with df=228. It shows that the mean scores of the attitude of the teachers with UG and PG qualification differs significantly; the t-value for the attitude of the teachers with UG and M.Phil qualification is 24.871 which is significant at 0.01 level with df=181. It indicates that the mean scores of the attitude of the teachers with UG and M.Phil qualification differs significantly; the t-value for the attitude of the teachers with PG and M.Phil qualification is 10.876 which is significant at 0.01 level with df=185. It shows that the mean scores of the attitude of teachers with PG and M.Phil educational qualification differs significantly. Further, on comparing the mean value of the attitude of these three groups, it was found that the teachers with M.Phil qualification have a high level of attitude towards CAI than the teachers of other two groups. In the comparison made with the attitude of the teachers with UG and PG qualification, it was found that the attitude of the teachers with PG qualification was found to be of a higher level than that of the teachers with UG qualification. It may therefore be said that the level of attitude of teachers with M.Phil qualification was found to be the highest.

FINDINGS

From the analysis, this study reveals the following major findings:

- The level of the attitude of male teachers towards CAI was found to be higher than that of the female teachers.

- The level of the attitude of teachers who belong to an urban residential background was found to be higher than that of the teachers with a rural background.
- The level of the attitude of teachers belonging to science discipline was found to be higher than that of the teachers of arts discipline.
- The level of the attitude of teachers who are having computer knowledge was found to be higher than the teachers who are not having computer knowledge.
- The level of the attitude of teachers belonging to a young age group was found to be higher than that of the other categories. It reflects that resources are easy to access and adapt at present.
- The level of the attitude of teachers with a post graduate degree and M.Phil., was found to be higher than that of the teachers with a graduate degree. It indicates that higher qualification enhances the attitude of teachers.

SUGGESTION

Teachers at different levels are trying to develop self instructional material according to the needs of the subject, and they are trying their level best to use the material in the teaching learning process. Any innovative instructional strategy and its success depend on the knowledge and positive attitude of the teachers. The author suggests that steps should be taken to conduct in-service training and refresher courses by the respective bodies in the working environment of the teachers to develop a favourable attitude towards CAI as well as to provide hands on experience for teachers in computer. Train them to develop computer based instructional software of their own.

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