Volume : 2 | Issue : 4 | April 2013 • ISSN No 2277 - 8160

Research Paper | Education

Effectiveness of Instructional Strategy on Computer Literacy Among Elementary School Students By Considering Covariate

Dr. T. Pradeep Kumar

Assistant Professor , St.Pauls M.Ed College, Bangalore, Karnataka & Project Director, ICSSR Major Research Project, New Delhi

ABSTRACT

The present study aims to find out the effectiveness of Instructional strategy on computer literacy among elementary school students by considering covariates. Findings revealed that there is no significant effect of Instructional Strategy, Gender and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates. There is a significant effect of Instructional strategy on computer literacy of the students. There is a significant effect of gender on computer literacy. There is a significant effect of Instructional Strategy, Type of school and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates. There is a significant effect of Types of school on Computer literacy of the students. There is a significant correlation between Intelligence and computer literacy of elementary school students.

KEYWORDS: Instructional strategy, Computer literacy, Elementary school students, Covariates

Introduction:

Computer literacy is an understanding of computer characteristics, capabilities, and applications, as well as an ability to implement this knowledge in the skillful, productive use of computer applications suitable to individual roles in society. Computer Literacy refers to having the skills and the knowledge to use computers competently (Pandya, Chaudhary (2000). Computer Literacy also implies that one is comfortable with using computer software and other applications that are related to the computer. Another important part of being computer literate is to know how the computer functions and operates. People having basic computer skills are considered very important assets in developed countries. In India, "Sarva Shiksha Abhiyan" (SSA) felt that use of Information and Communication Technology (ICT) and computers in the form of Computer Aided Learning (CAL) may help in achieving the Computer literacy in schools.

Methodology:

Objectives:

- To study the effect of Instructional Strategy, Gender and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates.
- To study the effect of Instructional Strategy, Types of School and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates.
- To study the correlation between Intelligence and computer literacy of elementary school students

Sampling design:

Data was collected during the academic year 2012-2013 from St.Micheals Elementary school (Private Unaided School) and Bantmaramma Elementary school (government school) of Kanakapura taluk. Total 154 VII standard students from both the schools were formed as control and experimental group.

Tools used for the study:

Standard Progressive Matrices (Non Intelligence test) developed by Raven and Computer literacy achievement test developed by Dr.T.Pradeep Kumar

Statistical technique employed:

TWO-WAY ANCOVA and Co-efficient of Correlation

Analysis and Interpretation:

1. There is no significant effect of Instructional Strategy, Gender and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Pretest Computerliteracy	6033.963	1	6033.963	2914.849	.000
Non Verbal Intelligence test	.032	1	.032	.016	.901
Treatment	605.413	1	605.413	292.459	.000
Gender	62.306	1	62.306	30.099	.000
Treatment X Gender	.146	1	.146	.071	.791
Error	306.371	148	2.070		
Total	8044.260	153			

A 2 by 2 between groups of covariance was conducted to assess the effectiveness of Instructional strategy, Gender and their interaction on computer literacy. The independent Variables were the Instructional strategy (Treatment i.e., Traditional Method and Multimedia strategy) and Gender (Boys and Girls). The Dependent Variable was scores of Computer Literacy Achievement test (CLAT) administered following completion of the intervention programs (Post- test). Scores of Computer Literacy Achievement test (CLAT) prior to the commencement of the programs (Pre-test) and Scores of Non Verbal Intelligence test were used as Covariates.

The obtained 'f' value = 0.071 is lesser than the tabled 'f' value of 3.90 at 0.05 level hence the null hypothesis is accepted and therefore it is concluded that there is no significant effect of Instructional Strategy, Gender and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates.

The obtained 'f'value 292.459 is greater than the tabled 'f'value of 6.81 at 0.01 level hence the null hypothesis is rejected and alternative hypothesis is accepted, therefore it is concluded that there is a significant effect of Instructional strategy on computer literacy, comparing the mean value of multimedia strategy (33.37) is higher than the traditional method (28.31) on computer literacy of the students.

The obtained 'f'value = 30.099 is greater than the tabled 'f'value of 6.81 at 0.01 level hence the null hypothesis is rejected and alternative hypothesis is accepted, therefore it is concluded that there is a significant effect of gender on computer literacy, comparing the mean value of gender it is seen that the mean value of boys (33.46) and girls (32.23) towards multimedia strategy is higher than the mean value of boys (29.53) and girls (28.17) towards traditional method. Therefore it is concluded that multimedia strategy on computer literacy are found to be effective on boys and girls.

2. There is no significant effect of Instructional Strategy, Types of School and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.

Pretest Computerliteracy	4477.479	1	4477.479	1846.671	.000
Non Verbal Intelligence test	.579	1	.579	.239	.626
Treatment	597.344	1	597.344	246.366	.000
Type of School	5.303	1	5.303	12.187	.000
Treatment X Type of School	5.101	1	5.101	12.104	.000
Error	358.844	148	2.425		
Total	8044.260	153			

A 2 by 2 between groups of covariance was conducted to assess the effectiveness of Instructional strategy, Type of School and their interaction on Computer literacy. The independent Variables were the Instructional strategy (Treatment i.e., Traditional Method and Multimedia strategy) and Type of School (Government and Private School). The Dependent Variable was scores of Computer Literacy Achievement test (CLAT) administered following completion of the intervention programs (Post- test). Scores of Computer Literacy Achievement test (CLAT) prior to the commencement of the programs (Pre-test) and Scores of Non Verbal Intelligence test were used as Covariates.

The obtained 'f' value = 12.104 is greater than the tabled 'f' value of 6.81 at 0.01 level hence the null hypothesis is rejected and alternative hypothesis is accepted and therefore it is concluded that there is a significant effect of Instructional Strategy, Type of school and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates.

The obtained 'f'value 246.366, greater than the tabled 'f'value of 6.81 at 0.01 level hence the null hypothesis is rejected and alternative hypothesis is accepted, therefore it is concluded that there is a significant effect of Instructional strategy on computer literacy of the students, comparing the mean value of multimedia strategy (33.37) is higher than the traditional method (28.31) on computer literacy of the students.

The obtained 'f'value = 12.187 is greater than the tabled 'f'value of 6.81 at 0.01 level hence the null hypothesis is rejected and alternative hypothesis is accepted and therefore it is concluded that there is a significant effect of Types of school on Computer literacy of the students. Comparing the mean value of Type of school it can be seen that mean value of Private school (35.92) and Government school (30.31) towards multimedia strategy is higher than mean value of Private school (31.85) and Government school (24.05) towards traditional method. It can also be concluded that Private school perform better in computer literacy through multimedia strategy.

3. There is no significant correlation between Intelligence and computer literacy of elementary school students

Variable	N (frequency)	Df (N-2)	Coefficient of Correlation (r)	Significance
Computer Literacy Intelligence	154	152	0.287	Significant at 0.01level

Table shows that, the coefficient of correlation, r is 0.287 which is greater than the table value 0.208 for df 152 at 0.01 level .Hence the null hypothesis is rejected and Alternative hypothesis is accepted. Therefore it is concluded that there is a significant correlation between Intelligence and computer literacy of elementary school students. Hence Students with higher intelligence tend to perform better in computer literacy.

Findings of the study:

There is no significant effect of Instructional Strategy, Gender and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates.

There is a significant effect of Instructional strategy on computer literacy, comparing the mean value of multimedia strategy (33.37) is higher than the traditional method (28.31) on computer literacy of the students.

There is a significant effect of gender on computer literacy, comparing the mean value of gender it is seen that the mean value of boys (33.46) and girls (32.23) towards multimedia strategy is higher than the mean value of boys (29.53) and girls (28.17) towards traditional method. Therefore it is concluded that multimedia strategy on computer literacy are found to be effective on boys and girls.

There is a significant effect of Instructional Strategy, Type of school and their interaction on computer literacy of students by considering Pre-Computer Literacy and Intelligence as covariates.

There is a significant effect of Types of school on Computer literacy of the students. Comparing the mean value of Type of school it can be seen that mean value of Private school (35.92) and Government school (30.31) towards multimedia strategy is higher than mean value of Private school (31.85) and Government school (24.05) towards traditional method. It can also be concluded that Private school perform better in computer literacy through multimedia strategy.

There is a significant correlation between Intelligence and computer literacy of elementary school students. Hence Students with higher intelligence tend to perform better in computer literacy.

Educational Implications:

Computer-based instruction and Web-based instruction with interactive practice activities are found to be effective methods to teach computer literacy. Students were very positive toward the project, enjoyed teamwork, able to think critically and became active participants in their learning process Milan (Regec, 2008). Therefore, multimedia-oriented projects, like many other problem-based learning solutions, can be used as an innovative and effective tool.

Positive learning results from the infusion of technology, Impact of computer based instruction showed improved performance in achievement test and increased levels of motivation among children (Nathani, 2008); teachers have been able to complete a given set of educational objectives in lesser time while teaching with computer.

Children who learnt through multimedia strategy excelled than other children who had been taught the computers in school throughout the year.

REFERENCES

• Milan Regec (2008) An Alternative Approach to Teaching Basic Computer Skills, doctoral thesis, Comenius University, Bratislava. • Nathani (2008) How technology enables learning in rural government schools, ugc project, New Delhi • Pandya, Chaudhary (2000) Effect of Computer Assisted Learning (CAL) in achieving higher cognitive skills, Ph.D thesis, saurashtra university, India.