Effect of Activity Based ICT strategies in development of Knowledge and Understanding and Attitude among student teacher trainees

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Abstract: Teacher education is an important role to build of an entire educational system. In this study the investigator tries to understand the attitude of effectiveness of using activity based ICT strategies among two year B.Ed CBCS course student teachers in Gold field college of education,Bangarpet (T) Kolar(D). Along with guide the researcher developed the attitude scale on activity based ICT strategy, there were 36 statements, each statement is to be perceived against five point scale-Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. The data were collected using researcher developed attitude tool and analyzed by't' test. Pre-post equivalent group design was followed for this study. The activity based ICT teaching strategy lesson plan prepared by researcher for teaching hard core paper (learning and teaching). The findings of the study is a significant relationship between activity based ICT strategy and attitude among B.Ed student teachers.

Keywords: Teacher education, educational system, ICT strategy.

1. INTRODUCTION

In 21st century ICT (Information and Communication Technology) occupied the major role in the field of education, because ICT strategies offer certain advantages in a class context. Students are generally motivated by the use of new technologies as they find them interesting and immediate in their effect. Hence activity based ICT teaching strategies are essential in every student teacher in educational institutions. All educational training centers should provide practices on activity based ICT teaching learning strategies. In present teacher education curriculum has given preference for ICT in education but the use of ICT strategies are very less. every teacher educators should use activity based ICT strategies in their teaching hard core subjects, than only the student teachers can follow the use of ICT strategies in their future teaching field. Teaching through activity based ICT strategies students can be helped to become increasingly able in accessing information and its subsequent critical use, and as such can be given more responsibility over their own learning. This develops independence and allows students to make greater use of the time available to them. Activity based ICT strategies develops social skills among trainees, where computer suites are developed with students in mind, they can offer a layout which allows pairs, or groups, of student teachers to work collaboratively through the use of activity based ICT strategies. Hence there is a clear signal that ICT and the development of ICT skills within student teachers should be a central element of student teachers development. It is therefore the responsibility of teacher educators to build in clear opportunities for student teachers to use activity based ICT teaching and learning strategies in a variety of ways and in a variety of settings.

Objectives of the study:

- To study the effect of Activity Based ICT strategy and attitude among student teachers with respect to stream.

- To study the effect of Activity Based ICT strategy and attitude of student teachers in relation to gender.

- To study the effectiveness of Activity Based ICT strategy in development of knowledge & understanding among student teachers in relation to gender.

- There is no significant relationship between Activity Based ICT strategy and knowledge & understanding among student teachers in relation to stream.

Hypothesis:

1. There is no significant relationship between Activity Based ICT strategy and attitude of student teachers in relation to stream.

2. There is no significant relationship between Activity Based ICT strategy and attitude among student teachers in relation to gender.

3. There is no significant relationship between Activity Based ICT strategy and knowledge among student teachers in relation to gender.

4. There is no significant relationship between Activity Based ICT strategy and knowledge among student teachers in relation to stream.

2. METHODOLOGY OF THE STUDY

The study is an experimental research in which pretest-posttest design with control group has been used. The investigator selected a true experimental design the pretest, posttest equivalent group design.

Table 1: Number of student teachers in Experimental Group and Control Group

Sample	Experimental Group	Control Group	Total
Male	07	07	14
Female	18	18	36
Total	25	25	50

The researcher randomly selected 50 student teachers in Gold field college of education, Bangarpet,T Kolar District.

Tools Used for the Study:

- Lesson plan for conventional method of teaching

- Lesson plan based on activity based ICT strategy

- Attitude scale (developed by researcher)

- Tool related Knowledge (developed by researcher)

Statistical Techniques Used for Analyses of the Data:

The following statistical techniques were used for analyzing the data as per the objectives and hypotheses of the study

- ❖ Descriptive Statistics

- ❖ Inferential Statistics

- ❖ Differential Statistics

Data was analyzed with reference to the objectives and hypotheses by using differential analysis including independent sample t-test, dependent t-test, and paired sample t test, and Cronbachs Alpa test for reliability of tool.

3. ANALYSIS AND INTERPRETATIONS

Table 1: Showing the statistics of Post-test scores of Attitude towards Activity based ICT teaching strategy between Experimental and control group.

Paired Samples Statistics

	Post test scores of	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Experimental group	156.32	25	5.786	1.157
	Control group	110.12	25	7.949	1.590

Table 2: Showing the t-test result between Experimental and control group post-test scores of Attitude towards Activity based ICT teaching strategy.

Paired Samples Test

Post test scores of	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Experimental vs. Control group	46.200	9.652	1.930	42.216	50.184	23.932	24	.000

From the above data it is clear that there were 25 students who took control group post-test and 25 students who took part in experimental group post-test. A paired sample t-test was run to determine if there were differences in control group post test scores and experimental group post test scores of students. Mean of experimental group post-test (156.32 ± 5.786) is slightly higher than the mean of control group post-test (110.12 ± 7.949). Hence a statistically significant difference of 46.200 (95% CI 42.216 to 50.184), t (24) =23.932, p=0.000 was observed. Hence null hypothesis; there is no significant difference in the Post-test scores of Activity based ICT teaching strategy between control group and experimental group is rejected and the alternative hypothesis is accepted.

Table 3: Showing the statistics of Post-test scores of knowledge towards Activity based ICT teaching strategy between Experimental and control group.

Paired Samples Statistics

	Post test scores of	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Experimental group	18.12	25	1.201	.240
	Control group	10.24	25	1.535	.307

Table 4: Showing the t-test result between Experimental and control group post-test scores of knowledge towards Activity based ICT teaching strategy.

Paired Samples Test

Post test scores of	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Experimental vs. Control group	7.880	1.716	.343	7.172	8.588	22.966	24	.000

From the above data it is clear that there were 25 students who took control group post-test and 25 students who took part in experimental group post-test. A paired sample t-test was run to determine if there were differences in control group post test scores and experimental group post test scores of students. Mean of experimental group post-test ($18.12.04\pm1.201$) is slightly higher than the mean of control group post-test (10.24 ± 1.535). Hence a statistically significant difference of 7.880 (95% CI 7.172 to 8.588), t (24) =22.966, p=0.000 was observed. Hence null hypothesis; there is no significant difference in the Post-test scores of Activity based ICT teaching strategy between control group and experimental group is rejected and the alternative hypothesis is accepted.

Table 5: Showing the statistics of Post-test scores of understanding towards Activity based ICT teaching strategy between Experimental and control group.

Paired Samples Statistics

	Post test scores of	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Experimental group	18.24	25	1.332	.266
	Control group	9.80	25	1.472	.294

Table 6: Showing the t-test result between Experimental and control group post-test scores of understanding towards Activity based ICT teaching strategy.

Paired Samples Test

Post test scores of	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Experimental vs. Control group	8.440	2.238	.448	7.516	9.364	18.860	24	.000

From the above data it is clear that there were 25 students who took control group post-test and 25 students who took part in experimental group post-test. A paired sample t-test was run to determine if there were differences in control group post test scores and experimental group post test scores of students. Mean of experimental group post-test (18.24±1.332) is slightly higher than the mean of control group post-test (9.80±1.472). Hence a statistically significant difference of 8.440 (95% CI 7.516 to 9.364), t (24) =18.860, p=0.000 was observed. Hence null hypothesis; there is no significant difference in the Post-test scores of Activity based ICT teaching strategy between control group and experimental group is rejected and the alternative hypothesis is accepted.

Table 7: Showing the statistics between Pre-test and Post-test scores of Attitude towards Activity based ICT teaching strategy in Experimental group.

Paired Samples Statistics

Post test scores of		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Experimental group	156.32	25	5.786	1.157
	Control group	101.68	25	9.326	1.865

Table 8: Showing the t-test result between Pre-test and Post-test scores of Attitude towards Activity based ICT teaching strategy.

Paired Samples Test

Post test scores of	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Experimental vs. Control group	54.640	12.155	2.431	49.623	59.657	22.477	24	.000

From the above data it is clear that there were 25 students who took control group post-test and 25 students who took part in experimental group post-test. A paired sample t-test was run to determine if there were differences in control group post test scores and experimental group post test scores of students. Mean of experimental group post-test (156.32±5.786) is slightly higher than the mean of control group post-test (101.68±9.326). Hence a statistically significant difference of 54.640 (95% CI 49.623 to 59.657), t (24) =22.477, p=0.000 was observed. Hence null hypothesis; there is no significant difference in the Post-test scores of Activity based ICT teaching strategy between control group and experimental group is rejected and the alternative hypothesis is accepted.

Table 9: Showing the statistics between Pre-test and Post-test scores of Knowledge towards Activity based ICT teaching strategy in Experimental group.

Paired Samples Statistics

Post test scores of		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Experimental group	18.12	25	1.201	.240
	Control group	10.40	25	1.936	.387

Table 10: Showing the t-test result between Pre-test and Post-test scores of Knowledge towards Activity based ICT teaching strategy.

Paired Samples Test

Post test scores of	Paired Differences					T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Experimental vs. Control group	7.720	2.638	.528	6.631	8.809	14.631	24	.000

From the above data it is clear that there were 25 students who took control group post-test and 25 students who took part in experimental group post-test. A paired sample t-test was run to determine if there were differences in control group post test scores and experimental group post test scores of students. Mean of experimental group post-test (18.12±1.201) is slightly higher than the mean of control group post-test (10.40±1.936). Hence a statistically significant difference of 7.720 (95% CI 6.631 to 8.809), t (24) =14.631, p=0.000 was observed. Hence null hypothesis; there is no significant difference in the Post-test scores of Activity based ICT teaching strategy between control group and experimental group is rejected and the alternative hypothesis is accepted.

4. FINDINGS

➢ The present study reveals that the student teachers have favorable attitude towards activity based ICT teaching learning strategies in their subjects.

➢ There is significant difference between the activity based ICT strategy and knowledge of student teachers and also influence the attitude towards using activity based ICT strategy among secondary school teacher trainees.

➢ The posttest scores of experimental group is significantly higher as compared to pretest scores of understanding towards activity based ICT teaching learning strategy.

➢ The posttest scores of knowledge is significantly higher as compared to pretest scores of student teachers studying in gold field college of education, Bangarpet.

5. CONCLUSION

The mean achievement score of Experimental Group is 156.32, which is significantly higher than the mean score of control Group i.e., 110.12. It may therefore be using of activity based ICT teaching learning strategies helps in enhancing the development of knowledge and understanding in hard core paper of student teachers in comparison to the conventional teaching methods and also influence the attitude towards using activity based ICT teaching strategies among secondary school teacher trainees.

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