

EFFECT OF ICT SKILLS DEVELOPMENT PROGRAM ON ACHIEVEMENT IN COMPUTER APPLICATION OF B.Ed STUDENTS

* Hemant Bhatt

ABSTRACT

The present study was undertaken to investigate the effect of information and communication technology skills development program on achievement in computer applications of B.Ed students. The sample of the study comprised of 102 B.Ed students selected randomly from the Private B.Ed colleges of Punjab affiliated to Punjabi university, Patiala. The 60 items computer achievement test was constructed and validated. The present study had an experimental design, included an experimental group (n=51) and a control one (n=51), and used pre test and post test measures. Statistical differences have been found in favour of the experimental group. The finding of the study revealed that there was significant difference in the computer achievement of students taught with different instructional treatment. These results strongly support the effectiveness of ICT skills development program in improving computer achievement of the B.Ed students

Keywords: ICT Skills Development Program, computer achievement test

Education is a light that shows the human beings the right direction to surge. The purpose of education is not just making a student literate but adds rationale thinking, knowledge ability and self sufficiency. When there is a willingness to change, there is hope for progress in any field. Creativity can be developed and innovative ideas and benefits both students and teachers. The 21st century is dedicated to bring up a knowledge-based society in which required competencies strive to follow the extremely fast development of tools that are needed for Life Long Learning. But, the structure of teacher education is not suitable to handle the extent of changes progressing in our daily lives influencing the future generation of learners. Thus, there needs to be a sustainable flow of innovation continuously shaping education in order to bring up a generation that can stand up to requirements within the future workforce. According to the Merriam Webster dictionary, innovation is merely “the introduction of something new” and Wikipedia adds very wisely, that “the central meaning of innovation relates to renewal or improvement, with novelty being a consequence of this improvement”. One can read a

lot of articles on innovation, which suggests a set of tools that are considered to be innovative and thus makes believe that the use of which would result in innovation.

Higher education plays a pivotal role in the development of a country, as it is viewed as a powerful means to build knowledge based society. In India, higher education imparted by universities is facing challenges in terms of Access, Equity and Quality. Use of ICT for promoting education and development has always been a part of policy and plan documents on education.

Lim (2005) found that the use of ICT in teaching and learning allowed students to be active in finding information and build knowledge from information obtained by the chance to cross-link between knowledge of subjects without restricted by time and distance. Banerjee et al. (2004) present the results of a randomized policy evaluation carried out in two Indian States to improve the quality of education in urban slums. The authors found out that a computer assisted program, designed to reinforce mathematical skills, had a large and positive impact on math scores; however, the

* Assistant Professor, Indo Global College of Education Abhipur, Distt. Mohali

program did not produce positive spillovers to other subjects. Machin et al. (2006) evaluated whether changes in ICT investment had any causal impact on changes in educational outcomes in English schools over the period from 1999 to 2003. Using an Instrumental Variable (IV) approach to control for endogeneity of ICT use, the authors found evidence for a positive causal impact of ICT investment on educational performance in primary schools. Moore (2005) summarised about the positive impact of ICT on pupils' learning such as increased students' motivation to stay on-task and drive them to behave better and produce high quality work. Besides, through ICT, students learnt more independently and did more works at a fast pace. According to Kubiato (2010), the results of students' attitudes toward ICT use in teaching and learning Science subject among high school students were based on statistical evaluation. Students seemed interested in using ICT in the Science subjects. Ong, Foo and Lee (2010) in their study revealed that the initiative of Malaysia Smart Schools promotes the use of ICT has created significant positive attitude towards Science among students. Most of the previous research showed significant effect of ICT on the computer achievement of students.

OBJECTIVES

1. To compare the mean achievement score of two groups of B.Ed students taught computer application with and without Information and Communication Technology (ICT) skills development

2. To compare the mean achievement score of two groups of B.Ed students taught computer application with and without Information and Communication Technology (ICT) skills development program after the experimental treatment.

METHOD

The study in hand aimed to study the effect of information and communication technology skills development program on computer achievement of B.Ed students. Keeping in view the objectives and purpose of study, experimental method was used by the investigator.

SAMPLE

The sample of the study comprised of 102 B.Ed students selected randomly from the Private B.Ed colleges of Punjab affiliated to Punjabi university, Patiala. The colleges were compared with regards to the criteria that college has almost same classroom climate, physical facilities, teacher taught ratio, sex ratio, digital lab etc. Two B.Ed Colleges of District Mohali were selected purposively to teach and collect data.

Measures

1. ICT skills development program developed by the researcher
2. Computer achievement test developed by the researchera

Procedure

Group	Independent Varriable	Pre Test	Post Test	Difference in outcomes	Net Effect
Experimental	ICT skills development Program	E1	E2	$E=E2-E1$	E=C
Control	Conventional teaching method	C1	C2	$C=C2-C1$	

Results and Discussion

Comparison between pre-test scores of experimental and control group on computer achievement of B.Ed students

In a pre test – post test control group design, it is essential to ascertain that both groups selected for

study are almost the same with respect to computer achievement. For this purpose, the investigator administered the computer achievement test on both experimental and control group and result of the same has been given in table 1:

TABLE 1: SIGNIFICANCE OF DIFFERENCE BETWEEN MEAN PRE TEST SCORES OF EXPERIMENTAL AND CONTROL GROUP ON COMPUTER ACHIEVEMENT

Group	N	Mean	Std. Deviation	t - Ratio	Level of Significance
Pre Test Control	51	17.64	4.01	1.15	Not Significant
Pre Test Experimental	51	19.82	5.12		

It can be observed from table 1 and figure 1 that the mean scores of the experimental and control groups on computer achievement are 17.64 and 19.62 with corresponding SD's 4.21 and 6.86 respectively. The calculated t-value was found to be 1.15 which is smaller than the required table value at .05 level. So, it is not significant. It means that there exists no significant difference between the pre-test scores of

experimental and control group on computer achievement test score. Therefore, there exists no significant difference in pre-test scores of control group and experimental group. It can therefore, be said that before treatment the experimental and control group taken for the study were almost the same with respect to computer achievement.

Comparison between mean post test scores of control and experimental group on computer achievement
Table 2: Significance of Difference between Mean of Post Test Score of Experimental and control Group On Computer Achievement

Group	N	Mean	Std. Deviation	t - Ratio	Level of Significance
Post Test Control	51	22.94	5.03	34.28	Not Significant*
Post Test Experimental	51	53.11	3.85		

* Significant at .01 level

It is apparent from the table 2 and figure 2 that Post-test scores of experimental and control group are significant at 0.05 and 0.01 levels of significance on computer achievement. Therefore, there exists significant difference in the mean gain scores on

computer achievement of B.Ed Students exposed to different instructional treatments. The mean scores indicate that there is significant difference in post-test scores of both the group when exposed to ICT skills program.

Comparison between gain Scores of Control Group and experimental group on computer achievement
Table 3: Significance of Difference between Gain Scores of Experimental and Control Groups On Computer Achievement

Group	N	Mean Gain Score	Standard Deviation	T Ratio	Level of Significance
Experimental Group I	51	33.29	7.80	21.36	Not Significant*
Control Group I	51	5.30	2.54		

It is apparent from the table 3 and figure 3 that post-test gain scores of control and experimental group are significant at 0.01 levels of significance on computer achievement. Therefore, there exists significant difference in the mean gain post-test scores on computer achievement of B.Ed students exposed to different instructional treatments. The mean gain scores of experimental group (33.29) are better than control group (5.30). It indicates that instructional treatment has good effect on the experimental group.

Conclusions

There were significant effects on the computer achievement of the students who were taught with the help of information and communication skill development program. The net effect of ICT skill development and conventional method of teaching showed significant difference in the mean gain score. The present study showed significant effect on the computer achievement of the B.Ed students.

EDUCATIONAL IMPLICATIONS

The present investigation clearly indicates that switching from the conventional lecture of simple chalk and board method of teaching to ICT Skill development program improved the level of academic achievement of B.Ed students quite significantly. It also implied that ICT skills development program package proved to be more tangible in its effectiveness on achievement than the conventional method of teaching. This package was favourably accepted by the subject teachers and they find it very convenient and useful for classroom teaching.

REFERENCES

- Banerjee, A., Cole, S., Duflo, E. and Linden, L. (2004). "Remedying Education: Evidence from Two Randomized Experiments in India", mimeo, MIT.
- based learning: A pilot study, *Education and Information Technologies*, 15(3), 181-204.
- Cross, M. & Adam, F. (2007). 'ICT Policies and Strategies in Higher Education in South Africa: National and Institutional Pathways', *Higher Education Policy* 20(1), 73-95.
- e-learning: Their relation to learning achievements and course satisfaction. *Computers & Education*, 54, 222-229.
- Haláková. (2009). Slovak high school students' attitudes to ICT using in biology lesson. *Computers in Human Behaviour* 25(2009): 743-748.
- Kozma, R. (2005). 'National Policies That Connect ICT-Based Education Reform To Economic And Social Development', *Human Technology*, 1(2), 117-156.
- Kubiatko, M. (2010). Czech university students' attitudes towards ICT used in science education. *Journal of Technology and Information Education* 3/2010 2(3) ISSN 1803-537X. Kubiatko, M. and Z.
- Lim, S. C. (2005). Web learning: Effects of constructivists approach than a direct approach to the science and high-level of thinking skills. Master's diss., Universiti Sains Malaysia.
- Machin, S. McNally S. and Silva, O. (2006). *New Technology in Schools: Is There a Payoff?*, Centre for the Economics of Education, London.
- Moore, C. D. (2005). Is ICT being used to its potential to improve teaching and learning across the curriculum? Retrieved from <http://www.teacherresearch.net>.
- Ong, E. T., L. K. Foo and S. M. Lee. (2010). Smart schooling and its impact on students' attitudes towards science. Paper presented at the ICASE 2010 World Conference on *Innovations in Science and Technology Education, University of Tartu, Estonia*.
- Paechter, M., Maier, M., & Macher, D. (2010). Students' expectations of, and experiences in e-learning: Their relation to learning achievements and course satisfaction. *Computers & education*, 54, 222-229.
- Penna, M.P. & Stara, V. (2009). Opinions on computers, and efficacy of a computer
- Puzziferro, M. (2006). Online technologies self-efficacy, self-regulated learning, and experimental variables as predictors of final grade and satisfaction in college Level online courses. *Dissertation Abstracts International*, 66(12), (UMI No. 3199984)