Attitude of Prospective Teachers and Prospective Teacher Educators' towards the Usage of Information and Communication Technology and its related technologies in Colleges of Teacher Education

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Abstract

Twenty first century is the age of Information and Communication Technology (ICT). ICT has influenced all aspects of human life, teacher education cannot be exception. This fact influences the change of attitudes towards the usage of ICTs. A wide range of ICT such as laptop, Liquid Crystal Display projectors, softwares like Power Point, MS Office and several other interactive courseware are now increasingly being used by the teachers and teaching learning communities so as to support teaching and learning in the classroom. Recognizing the impact of new technologies, the teacher education institutions are trying to restr5cutre their educational programs and classroom facilities, in order to minimize the teaching and learning technology gap between the present and the future.

The present study aimed at finding out the attitude of prospective teachers and prospective teacher educators towards the use of ICTs in the classrooms in relation to gender, class, habitat, discipline and medium of school. For carrying out the present study, a sample of 93 prospective teachers, which were B.Ed students and 30 prospective teacher educators, which were M.Ed students were taken. These students were from Vivekananda College of Teacher Education, Aligarh, Uttar Pradesh. Survey method was used to collect data. Data was collected with the help of self-constructed questionnaire which contained Likert type 25 items and one open ended question. The statistical techniques which used were mean, SD, t-ratio and Analysis of Variance in order to analyse the collected data. The findings of the study indicated that there was significant difference in the attitude of prospective teachers and prospective teacher educators on the basis of gender, class, medium

but no significant difference was found among them, on the basis of discipline and location. The present paper also tries to find out that how ICTs would be able to transform the present teacher-centred classroom learning environment into a more innovative, rich ICT-based student-centred learning environment.

Key words: *ICT, Interactive Learning Environment, Pedagogy, Likert Type Scale, Teacher*

Education.

INTRODUCTION

Information and Communication Technology (ICT) has influenced all aspects of human life, teacher education cannot be exception. The impact of ICTs in our daily lives ahs been steadily increasing. This fact influences the change of attitudes towards ICT. In the present age of globalization, the education systems all around the world are increasing pressure to use ICT and enhance the knowledge & skills of the teachers as well as of the students. ICT is an important instrument, which can transform the present isolated, teacher-centred, book-centred learning environment into a rich student-centred environment. With the growth and advent of new Information and Communication Technologies (ICTs) and their integration into higher education and teacher education programmes, ICTs have brought about a paradigm shift from the old traditional teaching- learning process into a new paradigm of teaching-learning.

With information being generated at a mind boggling pace, ICT has not only helped in expanding knowledge, but also have provided the necessary help and technical support required to keep up with the information growth. In the field of education, ICT provides the teacher with a variety of tools which would help to transform the oft seen teacher centred classroom into a rich, students focused, and knowledge rich environment. ICT demands systems wake up to the call of transformation in the paradigm of traditional learning. Many teachers & educators believe that creating a paradigm shift in the views of the learning process, coupled with the application of new information technologies, may play an important role in bringing educational systems into alignment with the knowledge based

information rich societies. Sandholtz, Ringstaff and Dwyer (1997) identify the shift that will take place in changing from a focus on teaching to a focus on learning.

ICTs have brought new possibilities into teacher education, but at the same time, they have placed more demands on teachers. ICTs exemplified by the Internet and Interactive multimedia, are of great significance for teacher education. It needs to be effectively integrated into formal classroom teaching and learning conditions. It is also to be focused in teacher education programmes. The ICTs integration in education in general and teacher education in particular is the need of the day. Its adequate recognition and support of relevant needs is crucial for integration and effective utilization for quality education programmes. Use of ICTs can make substantial change for teacher education and training in two ways. Firstly, the rich representation of information changes learner's perception & understanding of the content. Secondly, the vast distribution and easy access to information can change relationships between educators & student-teachers. ICT can also provide powerful support for educational innovations. The effective & efficient use of ICT depends largely on techno-competent teachers. They should be able to appreciate the potential of ICT and adjust themselves with a new culture of professionalism within electronic environment. A right and positive attitude towards ICT can bring out professional excellence among teachers.

We have witnessed the development of ICTs in various sectors over the last few decades including education. The change from teacher-centred education system to leaner-centred education has contributed greatly to the use of ICTs in education. Today's teacher education institutions and Colleges of teacher education are also trying to restructure their education programs and classroom facilities, in order to minimize the teaching and learning technology gap between the present and the future. This restructuring process requires effective integration of technologies into existing context in order to provide learners with knowledge of specific subject areas, to promote meaningful learning and to enhance professional productivity 9Tomei, 2005). According to Yildirin (20000, ever since the advent of information and communication technologies (ICTs), teacher education programs have struggled with the question of "how to teach" in order to enhance human potential and improve teaching with available technologies. Likewise, teacher education programs have also struggled with the question of "how to prepare prospective teachers". It is crucial for teachers to have appropriate ICT training during their pre-service education if they are to meet their students' needs in an information society.

Power Point presentation id the most commonly used ICT in the colleges of teacher education and other higher educational institutions. Using Power Point and slide shows, teachers can integrate multiple sources in tier classroom presentations. It holds students' attention through the use of video, graphics and music. The Internet provides coverage of current events and the latest information on an enormous number of topics. Slide shows tools allow teacher to incorporate text, video, audio and photos for the Internet easily, allowing them to share the most recent information using media that engage students.

Significance of the Study

As teacher plays a very important role in the moulding up tomorrow's citizen, the teachers should possess training in using the most modern technologies in the field of education. So the attitude of prospective teachers and prospective teacher educators is very important as it is a tendency which helps them to be favourable or unfavourable towards the usage of modern technology in the field of education in future when they go for teaching. So it is better as the government has introduced ICT in the syllabus of prospective teachers and teacher educators for the prospective teachers and prospective teacher educators which has provided opportunity to develop power point presentations in their subjects of teaching, which may encourage them to prepare lessons based on multimedia techniques. The introduction of ICT in education in general and in teacher education in particular will encourage and motivate the prospective teachers to explore new areas of advancement with reference to its latest developments in various disciplines and subjects.

Objectives of the Present Study

The following are the objectives of the study:

1. To find the difference in the attitude of prospective teachers and prospective teacher

educators towards the use of ICT-based classroom lectures.

2. To find the difference in the attitude of male and female prospective teachers and prospective

teacher educators towards the use of ICT-based classroom lectures.

3. To find the difference in the attitude of rural and urban prospective teachers and prospective

  teacher educators towards the use of ICT-based classroom lectures.

4. To find the difference in the attitude of prospective teachers and prospective teacher

  educators towards the use of ICT-based classroom lectures on the basis of their discipline.

5. To find the difference in the attitude of Hindi and English medium prospective teachers and

  prospective teacher educators towards the use of ICT-based classroom lectures.

6. To find the difference in the attitude of prospective teachers and prospective teacher

  educators towards the use of ICT –based lecturers on the basis of the type of school

  background.

Hypotheses for this Study

The Following are the hypotheses framed for this present study:

1. There is no significant difference in the attitude of prospective teachers and prospective teacher

   educators towards the of ICT-based classroom lectures.

2. There is no significant difference in the attitude of male and female prospective teachers and

  prospective teacher educators towards the of ICT-based classroom lectures.

3. There is no significant difference in the attitude of rural and urban prospective teachers and

  prospective teacher educators towards the of ICT-based classroom lectures.

4. There is no significant difference in the attitude of prospective teachers and prospective teacher

  educators towards the of ICT-based classroom lectures on the basis of their discipline.

5. There is no significant difference in the attitude of Hindi and English prospective teachers and

   prospective teacher educators towards the of ICT-based classroom lectures.

Method Used

   A survey based method was used to collect the data.

Sample taken

   The incidental but purposive sampling method was used for this study. A sample of 93 prospective teachers, which were B.Ed students and 30 prospective teacher educators, which were M.Ed students were taken from Vivekananda College of teacher education, Aligarh, U.P.

Tool Used for Data collection

   Data was collected with the help of self-constructed questionnaire which contained Likert type 25 items and one open ended question.

Statistical Techniques Used:

The statistical techniques which used were Mean, SD, t-ratio and Analysis of Variance (ANOVA) in order to analyse the collected data.

Results and Findings

Hypothesis 1: There is no significant difference in the attitude of prospective teachers and prospective teacher educators towards the of ICT-based classroom lectures. The results are shown in table 1

Table 1

S.No.	Class	N	Mean	S.D.	t-ratio	Level of significance
1.	B.Ed	93	93.78	10.06	4.12	Significant at 0.01
2.	M.Ed	30	85.84	8.86		

It can be observed from the Table 1 results that the 't' ratio is significant at 0.01 level. This means that there is significant difference in the attitude of B.Ed and M.E d respondents. Comparison of mean values showed that B.Ed respondents have a more positive attitude than the M.Ed students towards the use of ICT- based classroom lectures.

Hypothesis 2: There is no significant difference in the attitude of Male and Female prospective teachers and prospective teacher educators towards the use of ICT supported classroom lectures. The results are shown in table 2

Table 2

S.No.	Class	N	Mean	S.D.	t-ratio	Level of significance
1.	Male	43	93.62	10.97	1.38	Not Significant at 0.05
2.	Female	80	90.87	9.92		

It can be observed from the Table 2 results that the 't' ratio is not significant at 0.05 level. This means that there is no significant difference in the attitude of Male and Female respondents towards the use of ICT supported lectures.

Hypothesis 3: There is no significant difference in the attitude of rural and urban prospective teachers and prospective teacher educators towards the use of ICT-based classroom lectures. The results are shown in Table 3.

Table 3

S.No.	Class	N	Mean	S.D.	t-ratio	Level of significance
1.	Rural	58	90.26	10.14	1.61	Not Significant at 0.05
2.	Urban	65	93.23	10.38		

It can be observed from the Table 3 results that the 't' ratio is not significant at 0.05 level. This means that there is no significant difference in the attitude of urban and rural respondents towards the use of ICT-based classroom lectures.

Hypothesis 4: There is no significant difference in the attitude of prospective teachers and prospective teacher educators towards the use of ICT-based classroom lectures on the basis of their discipline. The results are shown in Table 4

Table 4

Source of Variation	df	SS	Mean Square Variance	F-ratio	Level of significance
Among	2	594.42	297.21	1.61	NS
Within	120	12453.58	103.78		

Results from table 4 shows that the F-ratio is not significant. Therefore, there is no significant difference in the attitude of respondents towards the use of ICT-based classroom lectures on the basis of their discipline.

Hypothesis 5: There is no significant difference in the attitude of Hindi and English medium prospective teachers and prospective teacher educators towards the use of ICT-based classroom lectures. The results are shown in Table 5.

Table 5

S.No.	Class	N	Mean	S.D.	t-ratio	Level of significance
1.	English	81	90.62	10.21	1.83	Not Significant at 0.05
2.	Hindi	42	94.18	10.30		

It can be seen from table 5 shows that the t- ratio is not significant at 0.05 level of confidence. Therefore, this means that there is no significant difference in the attitude of English and Hindi medium respondents towards the use of ICT-based classroom lectures.

Suggestions and Recommendations:

ICTs should provide both new opportunities and challenges, both for prospective teachers and prospective teacher educators. This can be used to serve as a catalyst to help change the role of teachers from information dispenser to that of guide, mentor, knowledge giver, navigator, consultant and even co-learner with the students. If teachers embrace the technology today and exploit its capability to its full potential, it can then only broaden and fulfil our professional aspiration. The following recommendations can be incorporated into our teaching-learning process so as to enrich the value and sanctity of our teaching profession through the use oif ICT skills:

1. Teachers should be computer literate and become familiar with the newly emerging

   technological devices and systems.

2. The continuing education opportunities should be available to the teacher in a sustained

    manner for their professional development.

3. Teachers are to be supported with a laptop, computer, modem and Internet access. This could

   enable them to have easy access to practice and to build their skill level and provide a vehicle

   for communication between themselves and support personnel.

4. Pre-service teacher education programmes are needed that not only prepare teacher to use the

   current generation of technologies in the future.

5. In-service professional development programs are needed to provide techno-based

   opportunities and technical support.

6. Internet facilities and video-conferencing facilities should be extended in all B.Ed colleges so

    that the prospective teachers and prospective teacher educators can make reference to the best

resource materials and interact with their colleagues or educational experts.

7. The subject curriculum at both B.Ed and M.Ed levels should be revised by including exposure

to various software available in the field of education.

8. The prospective teachers and prospective teacher educators should be given opportunity for

making their presentations through Power Point or Multimedia presentation with Multimedia

projector while doing practice teaching.

9. Online learning facilities should be extended to all teacher training centres.

10. Qualified teaching faculty should be appointed to teach ICT skills and ICT paper, both at

B.Ed and M.Ed levels.

11. The number of computer systems should be raised from the existing number to at least 50, so

that the ratio of students to computer system, becomes 1:2, and on-hands practical training

must be provided to the students of B.Ed and M.Ed, according to the syllabus of ICT paper.

12. There should be a balance between theory and practical classes in the teaching of the paper of

Information and Communication Technology (ICT).

Conclusion

The following are the conclusions drawn from the present study:

1. There is significant difference in the attitudes of prospective teachers and prospective teacher

educators towards the use of ICTs in the classroom lectures. Results from table 1 show that

B.Ed students have a more positive attitude than M.Ed students.

2. There is no significant difference in the attitudes of prospective teachers and prospective

teacher educators on the basis of their gender, location, discipline and medium of instruction

through which they did their schooling.

3. Both prospective teachers and prospective teacher educators, should have sound knowledge of

ICTs and usage of ICT related skills. The PowerPoint presentations made by the prospective

teachers and prospective teacher educators should be made more useful by adding more

visuals, animations, pictures, videos, sound and incorporated latest design to their slides. The

slides of the presentation should not pass quickly, text on the slide should not be too long, and

slides should be clear in terns of font size, colour and layout, continuous use should be

avoided, the text also should be bilingual, text language should be according to the level of the

students and all subjects/topics should not be taught through Power Point presentations.

If we are to cope up with the challenges of the rapidly changing society, in this era of globalization, then, it is the right time to make use of new opportunities offered by ICTs, plans have to be realized by giving prospective teachers and prospective teacher educators necessary equipments, related to ICTs. The teacher must the requisite knowledge and skills to use the new digital tools and resources so that they can become not only computer savy and computer literate, but digitally proficient also. The updating of teachers through exposure to ICTs will go a long way in redeeming the promise made for the future. The effective and

efficient use of ICT depends largely on techno-competent teachers. They should be able to appreciate the potential of ICT and should have a positive attitude towards ICT with a new culture of learning within electronic environment. They have to adopt the philosophy of life-long learning with technological support in their professional activities.

Thus, it can be said that the use of and effective implementation of ICTs in teacher training colleges and institutions, involves the rationalization of administrative routines, communication and transmission of knowledge, while at the same time preventing any serious negative impact on pedagogy and teaching conditions. For the success of teacher education and its programs, there is an urgent and necessary need to integrate ICT in teacher education and teacher education programs, so as to make prospective teachers and prospective teacher educators aware enough to use ICT in such a manner so that it is able to stimulate teaching and learning actively and successfully.

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