

Applications Of ICT In Teaching And Learning Process In Higher Education In Aligarh District Of U.P.

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ABSTRACT

The aim of this study was to find the application of Information and Communication Technology (ICT) in teaching and Learning in Higher education in Aligarh district of U.P. This study was on these main subjects: on ICT applications and equipment, teachers' attitude towards ICT. Two research questions were formulated to guide the investigator explore the phenomena. A descriptive survey design was used to collect data through the use of questionnaire. The result indicated that ICT has not been successfully incorporated in teaching and learning in higher education. Teachers' Competence and skills are more diverse. The majority of teachers have adequate skills for day to day and routine work, but many of them still have problems in finding a significant incorporation of ICT into teaching and learning. Most of the teachers proposed improvement of department computer labs, staff having ICT skill and improving internet connectivity in the institutions. Further, teachers' fine ICT skill and competency helps them to adopt new pedagogical practices and incorporate ICT in a purposeful way.

Key Words: ICT application, higher education, teaching-learning process

INTRODUCTION

Background to the study

The use of Information Communication Technology (ICT) in education has been a matter of prime concern in most of the countries during the last decade, but development has been unequal. In most developed countries such as UK, Universities have embedded the use of ICT in teaching and learning into the curriculum and demonstrate high level of effective and appropriate use to support teaching and learning Organization for Economic Cooperation and Development, (OECD, 2004).

(UNESCO, 2005) expressed that those countries have integrated ICT into their education system because of its profound implications like enabling academics and students to construct wealthy multi-sensory, interactive environments with almost unlimited teaching and learning potential. According to (Unwin, 2004), computers and internet can be used to increase teachers' basic skills and subject mastery, to provide resources that can later be used in classroom, and to help teachers build familiarity with specific instructional approaches. In addition, as ICT becomes more prevalent, computer based equipment is integrated into every aspect of University operation, having thus an influence on the student's performance. The growth of the ICT sector has challenged academics to arrange for effective use of the new teaching and learning tools in their teaching profession. (UNESCO, 2002) (Laferriere, Breuleux and Bracewell, 1999) argue that there are significant benefits of using ICT as part of teaching and learning process as long as teachers recognize the relationship between the employment of ICT and overall programmes. (Haddad and Draxler, 2005) point out that different ICTs do make some valuable contributions to various parts of educational development and effective learning through expanding access, promoting efficiency, improving the quality of learning, enhancing quality teaching and improving management systems. On the contrary, many developing countries in Asia are living in a world of technological deficiency, that is, lack of access to knowledge that is learnt via the internet (OECD, 2006). Technologies can play an important role in teaching and learning process.

Statement of the problem

The use of ICT in Education in Aligarh district of U.P is lagging behind expectation. This was disclosed by the fact that most of the Colleges have some computer equipment; only a fraction was equipped with basic ICT infrastructure necessary for teaching and learning. Essentially, ICT in education is used to promote information literacy that is the ability to access use, evaluate information from different sources so as to enhance teaching and learning, solve problems and generate new knowledge. It was noted that Aligarh district of Uttar Pradesh was still limited to ICT use in Higher Education. Therefore, the researcher intended to find out the Applications of ICT in teaching and learning process and its subsequent effects in Aligarh colleges.

Purpose of the study

The purpose of this study was to establish Applications of ICT in teaching and learning in Higher Education of Aligarh of U.P.

Objectives of the study

The objectives of this study were as follows:

- i) To establish the degree to which teachers were equipped with skills on ICT use in magnify teaching and learning.
- ii) To investigate the teachers' attitude towards the use of ICT in teaching and learning.

Research questions

Based on the objectives of the study, the following were the research questions for examination:

- i) To what degree were teachers equipped with skills on ICT use in enhancing teaching and learning?
- ii) What were teachers' attitudes towards the use of ICT in teaching and learning?

Significance of the study

ICTs have the potential to play a powerful role in enhancing teaching and learning in Higher education and preparing students to acquire skills, knowledge and competencies to enable them compete in the emerging global 'knowledge' economy. The study will also make possible recommendation towards increasing the use of ICTs in enhancing teaching and learning processes.

Limitations of the study

Only the area of Aligarh district of U.P. will be considered. Only Universities and affiliated Colleges Teachers will be considered for study.

Operational Definitions

Information and communication technology:

Information and Communication Technologies (ICTs) are referred to as the diverse collection of technological gear and resources that area unit created use of to speak. They are also made use of to generate, distribute, collect and administer information. the influence of the technology on supporting how students learn will continue to increase.

The applications of information and communication technology:

It means the use of computers, its programs, software Internet and their applications in addition to the use of database and multimedia in the higher education i.e; teaching and learning with ICT.

Higher education:

Education beyond the Senior secondary level especially education provided by a college or university.

LITERATURE REVIEW

This chapter discussed literature on what ICTs in teaching and learning entail, theoretical background in use of ICT in teaching and learning.

ICT and student performance

When considering the effects of ICT in education, there tends to be a focus on whether and to what extent ICT can raise student performance. According to research conducted by the British Educational Communication and Technology Agency Becta, (2000), there is evidence of a statistically positive association between ICT and higher achievement. Lowe, (2001) supports this read by deception that laptop primarily based education completely affected.

Engage students by motivation

Studies carried out in UK by impact (2000) on student attainments revealed that there is a positive effect on behavior, motivation, communication and process scales when teachers use ICT in teaching and learning. This is most frequently connected to a shift within the angle of scholar and larger involvement in learning activities. This view is further emphasized by the e-learning Nordic, (2006) which places a strong emphasis on ICT impact on student's motivation, engagement and creativity. Student achievement when compared to traditional classroom instruction.

Increasing learner independence

ICT provides teachers with the opportunity to provide various learning tasks within the same classroom for the benefit of the individual students' e-learning Nordic study, (2006). It further stated that students assume greater responsibility for their own learning when they use ICT working more independently and effectively.

Teachers' attitude of the application of ICT in teaching and learning

Underwood, (2006) provides evidence that teachers use ICT to support existing pedagogies. On supporting this view, Romboll Management, (2005) illustrates the

current dilemma concerning the pedagogical use of ICT in the classroom. He states, “Even although an oversized variety of lecturers have gained additional pedagogic information (through higher access to ICT-based materials and pedagogic conception via coaching and discussion), teachers have increased the use of ICT in teaching and learning”.

Methods and Procedures

This chapter contains description of study methodology, population and sample in addition to the chosen method as well as tool used to collect data, Also procedure of construction or development necessary steps to make sure its truthfulness and consistency. Furthermore, sensible procedures and applied mathematics process are employed in the treatment of the study knowledge as the following:

Research design

This study used descriptive survey design. This design is appropriate in this study because it enables the researcher to collect data from the respondents through the use of questionnaires.

Target population

The target population for this study consisted of Teachers In Universities and Colleges of Aligarh of U.P. Teachers play a key role in operational planning on ICT use in teaching and learning. They are in better position to provide relevant information about the use of ICT in teaching and learning. There were 96 teachers participate in the research study.

Sample size and sampling techniques

In this study, only 6 Colleges and Universities are included. The choice of the Colleges was purposive in From the identified Colleges simple random sampling procedure was used to select Teachers that participated in the research study. 96 teachers were purposively selected to fill questionnaires designed for them.

Research instruments

In order to explore the use of ICT in enhancing teaching and learning, data was collected using questionnaire. The questionnaires attempted to answer the research questions developed by the researcher.

Validity of instruments

To ensure validity, the researcher carried out a pilot study in two Colleges to determine content validity through the responses and results of respondents. Items that

may fail to measure the variables as intended were modified or discarded completely. The Colleges that were used in the pilot study are excluded from the main study.

Reliability of instruments

The researcher tested the reliability of research instrument by carrying out a pretest study in two Colleges. The findings from pilot study helped to determine the instruments, reliability. The responses from the piloted study were scrutinized by the researcher for consistency, relevance of information captured and for omission of content. Pilot study findings helped to improve the instrument items before the actual research was done.

Data collection instruments

Questionnaires were distributed personally to individual respondents in the Colleges by the researcher. The respondents filled the questionnaires and gave them back to the researcher immediately.

Data analysis technique

The researcher used quantitative research methods to analyze data. Each question had its responses coded by assigning codes of responses for each item. The responses were categorized into themes based on research questions and objectives. Categories like demographic information were analyzed using descriptive statistics such as frequencies, percentages, and averages. Some of the coded items were analyzed with the help of SPSS.

DATA ANALYSIS AND INTERPRETATION**Introduction**

This chapter focused on the questionnaire return rate, demographic information of respondents, perceptions and self-efficacy on the use of ICT, presentations, interpretations and discussion of findings. The presentation of the findings was done based on the research questions.

Questionnaire return rate

Questionnaire return rate is the proportion of the sample that participated as estimated in all the research procedures. All the 96 teachers (100%) returned the questionnaires.

Demographic information of teachers under study

This section describes the gender, experience of the teachers using ICT. In order to find out the gender of teachers, they were asked to

indicate their gender.

Table1: Gender of the Teachers

Gender	Frequency	Percentages
Male	64	66.6
Female	32	33.3
Total	96	100

Teachers were asked to indicate their experience in using ICT. Their responses are given in Table 2.

Table2: Teachers experience in using ICT

Experience in years	Frequency	Percentage
1 – 2 years	16	16.7
3 – 4 years	52	54.2
5 – 6 years	16	16.7
7 years and above.	12	12.5
Total	96	100.0

This finding indicates that majority of teachers have an experience of 3 – 4 years.

Table3: Descriptive Statistics of Teachers Perception of the

Application of ICT in Teaching							
Variables	SA	A	U	D	SD	MEAN	ST.
	%	%	%	%	%		DEV
ICT can improve teaching and learning procedure.	12.5	-	-	-	87.5	1.5	1.32
ICT can enhance students' critical thinking skills.	75	12.5	12.5	-	-	4.625	0.696
ICT can enhance students' involvement And response to teachers.	-	12.5	12.5	12.5	50	1.625	1.218
ICT can enhance cooperation among Students.	-	12.5	12.5	12.5	50	1.625	1.409
ICT can enhance teacher and student Communication.	62.5	37.5	-	-	-	4.625	0.484
ICT can provide chance to teachers for obtaining learning materials to better course content.	62.5	25	12.5	-	-	4.5	0.707
ICT tends to increase students learning Inspiration.	75	12.5	12.5	-	-	4.625	0.696

The findings of the study revealed that majority of the respondents had positive perception of the application of ICT in teaching and learning. However, (87.5%, mean

= 1.5) strongly disagreed that ICT can improve teaching and learning.

Teachers perceived skills in using ICT

Teachers were asked to rate their expertise in using ICT on a five point Likert type scale ranging from Very good (5), Good (4), Average (3), Weak (2) to poor (1).

Table4: Result of Teachers' perceived ICT skills.

ICT Skills	V.G.	G	A	W	P	MEAN
	%	%	%	%	%	
ICT skills in applications software e.g (M.S.Excel)	62	25	12	0.5	0.5	4.475
Search Engine (e.g. Google, Opera mini)	72	12	15	0.5	0.5	4.55
Word processors (e.g. Microsoft Word)	78	12	10.5	3.5	0.5	4.77
Communication (e.g. Email, Whatsapp)	67.5	16	12.5	1.5	2.5	4.445
Presentation Packages e.g. Power Point	78	12	7	1.5	1.5	4.655

As shown in table 4.15 majority of the respondents were very good in word processors (78%, mean = 4.77) and using power point presentation in classroom (78% mean = 4.655) because both of which have educational potential.

General use of ICT

Teachers were asked to respond to the extent to which they integrate ICT into their teaching on a four-point Likert- type scale ranging from “always” (4) to “never” (1). The result were tabulated in table 5

Table5: Descriptive Statistics of tools used by Teachers

Hardware	A	O	S	N	Mean	St. Dev.
Computer	80	12	4	-	3.79	0.498
Internet	60	20	12	4	3.417	0.861
Printer	72	16	8	-	3.667	0.622
Overhead Projector	76	12	8		3.708	0.613

Scale: A=Always O=Often S= Sometimes N=Never.

The results of the study showed that computer was almost always used by teachers (mean = 3.79). The least used hardware by teachers was the internet (mean = 3.417).

The overall mean score was 3.646 and the overall standard deviation was 0.649 signifying moderate use of hardware tools by teachers in their teaching

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter discusses the findings of the study, conclusions, recommendation for further research.

Summary of the study findings

The results showed that computers were almost always used by teachers and student (Mean 3.79). The least used hardware by teachers was the internet (Mean= 3.417). The results revealed that the majority of teachers were very good in word processors (78%, Mean 4.77) and using power point presentations in classroom (78%, Mean 4.655) This is an important achievement in use of ICT in teaching and learning because both of which have educational potential (OECD,2005).

The ICT can offer opportunities to teachers for obtaining educational resources from the internet to enrich course content. (Mean 4.5). The results indicated that majority of teachers (54.2%) involved students in using computers every day. The analysis revealed that teachers' perception, with regards to the use of ICT were positive and low but not statistically significant. The study revealed that there was inconsistency between teachers' belief and their actual use of technology in classroom.

Recommendations

From the findings of the study, it is recommended that;

- teachers be given sufficient training on how to use ICT in teaching and learning processes to acquire the requisite knowledge and skills in integrating the technology in classrooms.

- Teachers should also be provided with adequate technological resources, technical support and administrative support to encourage them successfully use ICT in teaching and learning.

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