ICT USAGE IN CLASSROOMS BY SCHOOL TEACHERS IN PATNA DISTRICT

Abhilasha Sinha

Ph.D Research Scholar,

Faculty of Education,

B.R.A.B.U, Muzaffarpur, Bihar

Abstract

ICT in Education is the foundation upon which a country develops. It is a dynamic force in the life of every individual influencing his physical, mental, emotional, social and ethical developments. It is a complete development of the individuality of a child enabling him to make original contribution to human life.

The integration of Information and Communication Technology (ICT) in teaching and learning provides more opportunities for teachers and students to work better in an information age. However, some barriers may discourage teachers to integrate ICT in the classroom and prevent them to introduce supporting materials through ICT usage. This study aims to investigate the main barriers for integrating Information and Communication Technology (ICT) by school teachers. Data was obtained from 150 (97 female, 53 male) High school teachers in Patna district. The findings indicated that although teachers had a strong desire to use ICT in the classroom, they were encountered with some barriers. Insufficient technical supports at schools and little access to Internet and ICT were considered as the major barriers preventing teachers to integrate ICT into the curriculum. Present study revealed that ICT resources including software and hardware, effective professional development, sufficient time, and technical support need to be provided to teachers. No one component in itself is sufficient to provide good teaching. However, the presence of all components increases the possibility of excellent integration of ICT in learning and teaching opportunities. Studying the obstacles to use of ICT in education may assist educators to overcome these barriers and become successful technology adopters in the future.

Key Words: *Information and Communication Technology (ICT), Integration, Barriers, Teaching learning process.*

Introduction

ICT is an, electronic means of capturing, processing, storing, communicating information. The use of ICT in theclassroom teaching-learning is very important for it provides opportunities for teachers and students to operate, store, manipulate, and retrieve information, encourage independent and active learning, and self-responsibility for learning such as distance learning, motivate teachers and students to continue using learning outside school hours, plan and prepare lessons and design materials such as course content delivery and facilitate sharing of resources, expertise and advice. ICT as technologies used to communicate

in order to create, manage and distribute information. In a broad definition of ICTs includes computers, the internet, telephone, television, radio and audio-visual equipment. ICT is any device and application used to access, manage, integrate, evaluate, create and communicate information and knowledge. Digital technology is included in this definition as services and applications used for communication and information processing functions associated with these devices.

"Information and communication technologies (ICTs) are broadly defined as technologies used to convey, manipulate and store data by electronic means. This can include e-mail, SMS text messaging, video chat (e.g., Skype, WhatsApp, Imo), and online social media (e.g., Facebook). It also includes all the different computing devices (e.g., laptop, desktops and smart phones) that carry out a wide range of communication and information functions. All these electronic tools constitute the "Information and communication technologies" (ICTs) and are used to convey, manipulate and store information (Perron, et. al. 2010:67).

Although ICT is now a useful tool in class, many teachers still struggle to integrate technology in their teaching practice. Taken into account that teachers' views are essential for ICT use in class, it is important to investigate their perceptions regarding barriers to the use of computers in classes. The identification of teachers' perceived barriers is important, as some barriers may play a role in excluding technology in classes.This paper explores the main barriers toeffective integration of ICT in secondary school teachers in Patna district.

Importance of the Research

As a new pedagogy ICT integration in education has a lot of potential to enhance learning. It offers variety to the students and therefore can keep them motivated to learn. As with any new reform in education, ICT integration faces a number of challenges. If these are not adequately addressed they act as barriers to the effective implementation of this reform. If it is not implemented successfully it discourages those who initially had the enthusiasm to take part in adopting ICT. Hollow, 2011 argues that, "A new technology is introduced into a school accompanied by a lot of energy and enthusiasm, but over time it doesn't get utilized in the way the participants anticipated."

The process of using ICT in everyday education is very complicated. The opportunities provided by ICT to support teaching and learning are not problem-free. The virtually limitless opportunities of access to information in and educational context can pose a real danger of information overload if the teachers do not have the skills in filtering information for relevance, or are unable to establish a coherent organizing principle. Both students and teachers may lack the necessity skills to access, process and use information (Yunus,et. al.

2009). Even there are a number of difficulties which act as barriers and prevent teachers to integrate ICT into the classroom.

Research Objectives

This study sought to find out the barriers to the use of ICT in high school classes, as perceived by high school teachersin Patna District. It alsorecommends solutions to these challenges in order to enhance the effectiveness of the reform.

The research objectives were:

1. To find out the views of school teachers' Familiarity with ICT.
2. To find out the major barriers related to ICT usage by the school teachers.
3. To find out the views of school teachers regarding the barriers related to the occurrence of technical problems during ICT usage.
4. To find out the views of school teachers regarding the barriers related to the lack of adequate teacher training opportunities for ICT projects.
5. To find out the views of school teachers regarding the barriers related to ICT integration in curriculum transaction.
6. To find out the views of school teachers regarding the barriers related to interest in ICT usage.
7. To find out the views of school teachers regardingthe barriers related to confidence in ICT usage.
8. To find out the views of school teachers regardingthe barriers related to ICT hardware.
9. To find out the views of school teachers regardingthe barriers related to ICT software.
10. To find out the views of school teachers regarding the barriers related to the lack of adequate funding for ICT projects.

Method

Design

Descriptive survey method was used to collect data.

Sample

Purposive sampling technique was used to select the sample. The sample consisted to 150 school teachers of 4 different school of Patna where ICT is much in use for curriculum transaction. The sample consisted of 53 male teachers and 97 female teachers.

Tool

Data was collected by the use of a self-constructed opinionnaire, which consisted of two sections.

Section A involved statements regarding teachers' familiarity with ICT. In this section teachers'views about the appropriateness of computer use in class (use of computer in class and frequency of computer use). In assessing teachers' views /perceptions about the appropriateness of ICT use in class, teachers were asked to reply 3 statements/item aiming to investigate teachers' perceptions about the appropriateness of ICT use in high school classes using a four-point likert type rating scale: 1(Never Used), 2 (Limited User), 3 (Frequent User), 4 (Confident User).

Section B involved 12statements/ items aiming to investigate teachers' perceived barriers to the integration of ICT in high school classes. This section was based on (Salehi H. and Salehi Z. 2012, Singh and Mazumdar 2013) study. Teachers were asked to rate their views on a three-point Likert type scale: 1 (not a barrier), 2 (minor barrier), 3 (major barrier).

Data Analysis

In the analysis phase of the study frequencies and percentages for each item were calculated and presented in tables.

RESULTS AND DISCUSSIONS

Objective 1

To find out the views of school teachers' Familiarity with ICT.

Table 1: Views of School Teachers' Familiarity with ICT, reported in frequencies and percentage

Items	Variables	Frequency	Percent (%)
How is your personal experience with ICT?	Never Used	30	20
	Limited User	37	24.67
	Frequent User	60	40
	Confident User	23	15.33
How do you judge yourself in using ICT in your classes?	Never Used	58	38.67
	Limited User	45	30
	Frequent User	25	16.67
	Confident User	22	14.67
How do you think of other teachers' familiarity with ICT?	Never Used	40	26.67
	Limited User	58	38.67
	Frequent User	27	18.00
	Confident User	25	16.67

This part of the questionnaire, including three items, was related to the teachers' familiarity with ICT. When the respondents were asked about their personal experience with ICT, it was found that the majority of high school teachers (65.33 %) considered themselves as frequent or confident users of ICT. This belief is a clear indication of the high school teachers' familiarity with ICT; however, this does not necessarily mean that the teachers will integrate ICT into the curriculum. Less than one fourth of the respondents (24.67 %) were limited users of ICT and just two teachers had never personally used ICT. When the teachers were requested to judge about themselves regarding the use of ICT in the classroom, the majority of them (38.67 %) stated that they never use ICT in the classroom or they prefer to use it very little. As it can be seen in Table 1 and Figure 1, most of the teachers (65.34 %) believed that their colleagues are not familiar with ICT or they use the ICT very little. Based on the surveyed teachers' perceptions, just one fourth of the teachers (34.67 %) are frequent or confident users of ICT. In fact, the results of this item are not consistent with the results obtained from the first item in this part in which the teachers were asked about their personal experience with ICT.

Figure 1 : Chart Presentation of School Teachers' Familiarity with ICT
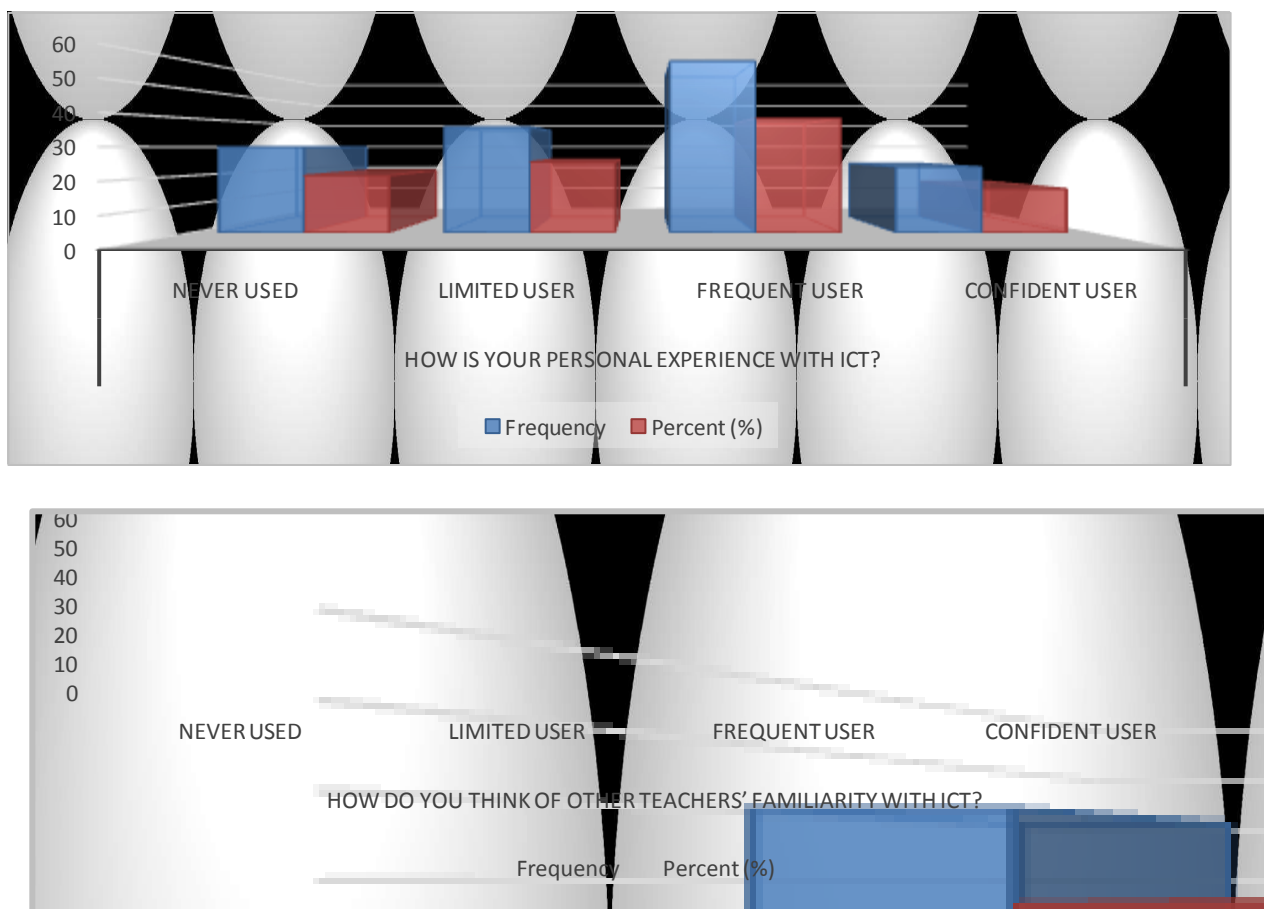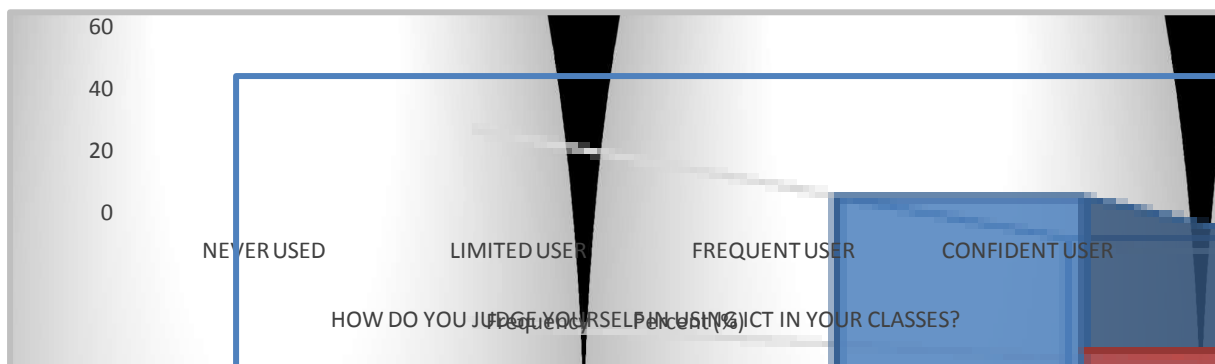
OBJECTIVE 2

To find out the major barriers related to ICT usage by the school teachers.

Table 2: Major barriers faced by School teacher, reported in percentage

Items	Not a Barrier	Minor Barrier	Major Barrier
Lack of support regarding ways to integrate technology into the curriculum	57.10	29.30	13.6
Lack of time for teachers to learn/ practice/ plan ways to use computers (in the class)	84.3	6.40	9.3
Limited access to computer hardware.	39.5	32.25	28.25
Lack of technical support.	86.83	6.15	7.02
Lack of information about educational software.	79.30	15.70	5.0
Lack of training	53.60	32.80	13.6
Lack of administrative support.	60.70	13.60	25.70
Lack of funding.	48.60	38.60	12.8
Fear of using technology	58.7	15.60	25.70
Lack of confidence in using computers.	50.6	22.4	27
Lack of interest of teachers in using ICT.	57.10	29.30	13.60
Recurring technical faults and the expectation of faults occurring during access to computers.	70.70	13.60	15.70

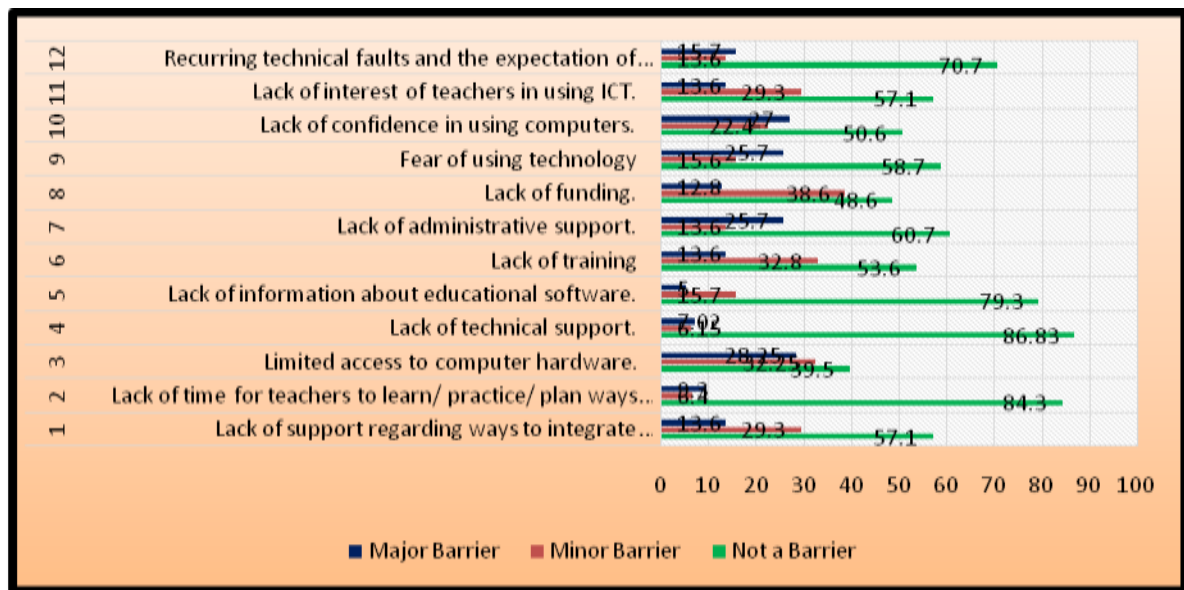**Figure 2 : Graphical presentation of Major barriers faced by School teacher, reported in percentage**

Table 2 and Figure 2reveals that item no. 3, 7, 9 and 10 are the major barrier faced by the school teachers in ICT usage.

OBJECTIVE 3

To find out the views of school teachers regarding the barriers related to the occurrence of technical problems during ICT usage.

Item No. 12 and 9 are the barriers related to the occurrence of technical problems cropped up during ICT usage. Table 2 reveals that 15.7 % and 25.70% consideredItem No. 12 and 9 as a major barriers respectively.

OBJECTIVE 4

To find out the views of school teachers regarding the barriers related to the lack of adequate teacher training opportunities for ICT projects.

Table 2 reveals that Item No. 6 is the barrier related to the lack of teacher training opportunities for ICT projects. Table 2 reveals that only 13.6 % of the respondents considered it as a major barrier.

OBJECTIVE 5

To find out the views of school teachers regarding the barriers related to ICT integration in curriculum transaction.

Item No. 1, 7 and 2 are the barriers related to ICT integration in curriculum transaction.Table 2 reveals that 13.6 %, 25.70% and 9.3 % considered Item No. 1, 7 and 2 as a major barriers respectively.

OBJECTIVE 6

To find out the views of school teachers regarding the barriers related to interest in ICT usage. Item No. 11 is the barriers related to interest in ICT usage.Table 2 reveals only 13.60 % of the respondents consider it as a major barrier while 57.10% of the respondents do not consider as a barrier.

OBJECTIVE 7

To find out the views of school teachers regardingthe barriers related to confidence in ICT usage.

Item No. 10 is the barriers related to the lack of confidence in ICT usage.Table 2 reveals only 27 % of the respondents consider it as a major barrier while 50.6 % of the respondents do not consider as a barrier.

OBJECTIVE 8

To find out the views of school teachers regardingthe barriers related to ICT hardware.

Item No. 3 is the barrier related to ICT hardware. Table 2 reveals only 28.25 % of the respondents considered it to be as a major barrier.

OBJECTIVE 9

To find out the views of school teachers regardingthe barriers related to ICT software.

Item No. 5 is the barrier related to ICT hardware. Table 2 reveals only 5.0 % of the respondents considered it as a major barrier while 79.3 % of the respondents do not consider as a barrier.

OBJECTIVE 10

To find out the views of school teachers regarding the barriers related to the lack of adequate funding for ICT projects.

Item No. 8 is the barrier related to ICT hardware. Table 2 reveals only 12.8 % of the respondents considered it as a major barrier while 48.60 % of the respondents do not consider as a barrier.

Conclusion

- Limited access to computer hardware, Lack of administrative support, Fear of using technology, Lack of confidence in using computers, Lack of support regarding ways to integrate technology into the curriculum, Lack of training were found to be the major barriers in ICT usage by school teachers.

- Lack of time for teachers to learn/ practice/ plan ways to use computers (in the class), Lack of technical support, Lack of information about educational software, Recurring technical faults and the expectation of faults occurring during access to computers, Lack

of funding, Lack of interest of teachers in using ICT are not at all barriers for ICT usage to the school teachers.

- Therefore it can be concluded that studying the barriers in the use of ICT in education may assist educators to overcome these barriers and become successful technology adopter in the future. The integration of ICT in education has a lot of potential toenhance teaching and learning in secondary schools if it is carefully planned for and adequate support is given to teachers. The barriers which have been faced in integration of ICT are key aspects which educational institutions should address before implementation of the reform, to increase its effectiveness.

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