THE ROLE AND POTENTIAL OF ICT IN EARLY CHILDHOOD EDUCATION

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ABSTRACT

This study aims to investigate the role and potential of ICT Information Communication Technology in ECE Early Childhood Education. Quantitative descriptive research design was used. The population of this study was 34 head teachers and 105 teachers of government and private schools. Two closed ended questionnaires (Head teacher & Teacher) were adopted with reliability 0.76 and 0.81 respectively. The conclusion showed significant correlation in application of ICT resources by private schools. Mostly schools used computers for managing school related tasks. Mostly ECE teachers had positive opinion regarding the impact of ICT on ECE process. The average students’ strength was high in ECE classes than the average number of ECE teachers per class. There was significant relationship between inadequacy of ICT resources and girls level I/play group and moderate level of significant correlation between inadequacy of ICT resources and Level I/play group ECE teachers. ICT usage was vulnerable in public schools. It was concluded that in early childhood education ICT’s role and potential had positive impact on preschoolers’ teaching and learning. This study recommended that the curriculum developers and practitioners may focus on development of the ICT contents in national language.

Key words: Information Communication and Technology (ICT), ICT integration, Early Childhood Education (ECE)

INTRODUCTION

Now a day school teachers are dealing with “digital natives” who have non – remarkable feature of technology usage in their growing life across the globe. Knowledge of information can be created, collected and stored by the use of technology. People are connected across globe by the use of technology and have shared resources across globe, thus they have created knowledge and distributed knowledge products benefits across globe (Victor, 2017). According to Van Scotter and Boss (2002), technology has enabled children to use and adapt digital equipment to express themselves verbally, visually and emotionally. Technology has supported teachers by providing additional resources for planning, learning styles and meeting individual student’s needs. During last two decades the literature had focused on a link between students’ academic performance and ICT usage by the students.
RATIONALE OF THE STUDY

There is sudden improvement in the process of teaching due to use of ICT and by adopting novel methods for teaching and learning. There is dire need for 21st century teachers to improve their technology integration skills and update their application level knowledge. As strengths of students are increasing day by day in Early Childhood Education. New thinking has been developed across globe for the use of ICT in education for creating interactive learning environment. However, there are limited studies who investigated the impact of ICT on ECE students' learning. Very few researches have focused the role of ICT for promoting and creating interactive educational environment for ECE students. Cognitive and language skills have been developed by integrating ICT in education sector. It was a motivation to investigate the role and potential of ICT in ECE. The government of Pakistan has established ECE centers. Therefore, it was essential to gain latest picture ICT usage and its potential at ECE level.

SIGNIFICANCE OF THE STUDY

There is significant contribution of this study’s findings. This study has contributed to determine the role and potential of ICT in early childhood and education settings. The roles and responsibilities of teachers regarding execution, application and incorporation of ICT at ECE level have been verified. The issues and challenges faced by ECE teachers and head teachers for ICT integration at ECE level has been determined by this study. Thus this study has highlighted the potential role of ICT which will be helpful for the rules makers, decision, proclamation, pronouncement makers and the practitioners for successful integration of Information Communication and Technology at ECE level.

STATEMENT OF THE PROBLEM

For promoting and creating interactive educational environment for ECE (Early Childhood Education) classes very few researches has focused role of ICT so far. For the development of educational growth, the ICT integration in education sector helps in the development of language and cognitive skills. It was a motivation for investigating the task, function, role and prospective, probable potential of ICT (Information Communication & Technology) in ECE (Early Childhood Education). Pakistan is underway in ICT integration. In Khyber Pakhunkhwa, Sindh and Punjab provinces pilot projects have been initiated recently by establishing ECE Centers. Provincial education department has planning for ECE. Therefore, for gaining complete understating of latest situation of ICT use at ECE level in Pakistani context was fundamental.

OBJECTIVES OF THE STUDY

The present study attempts to explain role and potential of ICT in Early Childhood Education. For this purpose, the study focused on different aspects of the problem such as role of ICT, ICT integration challenges and hindrances etc.,
Following were the main objective of the study:

1. To investigate the role of ICT integration in ECE.
2. To recognize the factors that help ECE practitioners to integrate ICT into ECE in Pakistan.

RESEARCH QUESTIONS

Following were the research questions of the study:

1. What is the status of early childhood education classroom settings?
2. How to utilize available ICT resources for its successful integration in ECE classrooms?

REVIEW OF RELATED LITERATURE

Palomino reported (2012) that Information and Communication Technology (ICT) has been contributing its role in every phase of life especially in the field of education. The use of ICT has become crucial, as we are living in knowledgeable society. According to Kerckaert et.al., (2015) the foundation of education of any country is reinforced by technology across globe. Different sources of knowledge have been integrated by the use of technology thus, the process of education have been revolutionized. It was reported by Siraj-Blatchford & whitebread in 2009 that the use of digital and electronic equipment has an impact in educational environment, this environment allows teacher and students to get information and communicate with each other. Bolstad explained (2004) that only computers are not included in Information Communication and Technology while internet, mobile phone, fax machines, communication soft wares, video conferencing, interactive stories, computer games and electronic whiteboards also include Information Communication and Technology. Many researchers have been convinced about the role of ICT (Information Communication and Technology) in Early Childhood Education (ECE) provides diverse opportunities for preschoolers learning.

RESEARCH METHODOLOGY

This study was Quantitative and descriptive in nature to obtain a clear picture of the role and potential of ICT use in Early Childhood Education (ECE) of public and private sector schools Lahore, Pakistan. For this purpose, descriptive survey research was used to obtain a clear picture of the role and potential of ICT in Early Childhood Education (ECE) of public sector schools Lahore, Pakistan. The survey focused on potential use of information and communication technologies (ICT) in teaching and learning at Early Childhood Education levels. A clear picture of naturally happening situation is provided by Descriptive research design. For this study population was Early Childhood Education Government and private school head teachers and teachers of district Lahore. Multi stage sampling technique was used. At the first phase Stratified random sampling technique was used. To make sure equal involvement of participants from ECE Government schools, strata was made to select the sample in the same proportion as they exist in the population. Total sample size of the study was
comprised of 34 head teachers. In the second phase for the selection of teachers, random sampling technique was used, in case of more than two teachers and convenient sampling was used for private schools. In this way 105 teachers from Early Childhood Education (ECE) Government and private schools were selected as sample. Current questionnaires were finalized after extensive literature review related to use of ICT.

FINDINGS AND DISCUSSION

FINDINGS FOR THE ASPECT OF EARLY CHILDHOOD EDUCATION (ECE) AND USE OF INFORMATION COMMUNICATION AND TECHNOLOGY (ICT) BY TEACHING SECTOR AND DEMOGRAPHIC VARIABLE

i. There was no significant difference in ICT skills scores for public sector and private sector p>.05. These results indicated that the ICT skills did not relate to the teaching sector. While the results of application indicated that there was significant difference in ICT applications scores for public sector (M=2.88, SD=0.67) and private sector (M=3.36, SD=0.73), p<.001. The results show that the ICT application relate to the teaching sector.

ii. There was no significant difference in ICT skills scores for male and female p>.05. These results indicated that the ICT skills did not relate to the gender. While the results of ICT application indicating that there was no significant difference in ICT applications scores for males and females p>.05. These results indicating that the ICT application did not relate to the gender.

iii. There was no significant difference in ICT skills scores for male and female p>.05. These results indicated that the ICT skills did not relate to the gender in public sector. While the results of ICT application indicating that there was no significant difference in ICT applications scores for male and females p>.05. These results indicating that the ICT skills did not relate to the gender in public sector.

iv. There was no significant difference in ICT skills scores for male and female p>.05. These results indicated that the ICT skills did not relate to the gender in private sector. While the results of ICT application indicating that there was no significant difference in ICT applications scores for males and females p>.05. These results indicating that the ICT applications did not relate to the gender in private sector.

v. There was no significant difference in ICT skills scores for ICT trained teachers and not trained teachers p>.05. These results indicated that the ICT skills did not relate to the ICT trained teachers. While the results of ICT application indicating that there was no significant difference in ICT applications scores for ICT trained teachers and not ICT trained teachers p>.05. These results indicating that the ICT applications did not relate to the not ICT trained teachers.

vi. There was no significance difference in ICT training courses for public sector and private sector p>.05. There was no significant difference in ICT skills scores for public sector and private sector p>.05. These results indicated that the ICT training courses and ICT skills did not relate to the public and private teaching sector. While the results of ICT application indicating that there was significant difference in ICT applications scores for public sector (M=2.88,
vi. The descriptive statistics results obtained by the application of One-way between group analyses of variance revealed that there was no statistically significant difference at the p > .05 level in skills for three groups of age. These results indicated that skills did not relate to the age group. Second analysis of variance showed that there was overall no statistically significant difference at the p > .05 level in applications scores for three groups of age. These results indicated that the application did not relate to the age group.

**FINDINGS FOR THE ASPECT OF OPINION ABOUT IMPACT OF ICT**

i. The results indicating that majority of ECE teachers had positive general opinion about ICT impact on teaching (74%). The results also indicating that majority of ECE teachers had positive general opinion about ICT impact on preschoolers learning (55%).

ii. There was no significant difference in ICT impact on teaching for male and female p>.05. These results indicated that the ICT impact on teaching did not relate to the gender. While the results of ICT impact on preschoolers’ learning indicating that there was no significant difference in impact of ICT on preschoolers learning scores for males and females p>.05. These results indicating that the impact of ICT on preschoolers’ learning did not relate to the gender.

iii. There was no significant difference in ICT impact on teaching in public sector and private sector p>.05. These results indicated that the ICT impact on teaching did not relate to the teaching sector. While the results of ICT impact on preschoolers’ learning indicating that there was no significant difference in impact of ICT on preschoolers learning scores for public sector and private sector p>.05These results indicating that the impact of ICT on preschoolers’ learning did not relate to the teaching sector.

**FINDINGS FOR THE ASPECT OF OBSTACLES TO USE ICT IN TEACHING AND LEARNING**

i. There was significant difference in inadequacy of ICT resources scores for male (M=3.23, SD=0.35) and female (M=3.23, SD=0.35), p<.05. These results indicated that the inadequacy of ICT resources related to the gender and there was no significant difference in shortage of ICT resources scores for males and females p>.05. These results indicating that the shortage of ICT resources did not relate to the gender.

ii. The descriptive statistics results obtained by the application of One-way between group analyses of variance revealed that there was no statistically significant difference at the p > .05 level in shortage of ICT resources scores for three groups of professional experience (Table 4.10.5).

iii. Findings show that there was moderate level of significant correlation between inadequacy of ICT resources and Level I/play group ECE teachers (r=.365*,
n=34, p < .05). There was significant relationship between inadequacy of ICT resources and girls level I/ play group (r=.342*, n=34, p < .05).

Findings for opinion about ICT use for educational purposes

iv. Its results indicating that majority of the (91%) head teachers (M=4.05, SD=1.09) strongly agreed that students use internet to retrieve information and mostly (85%) head teachers (M=4.17, SD=.86) strongly agreed that Students use internet to work in a collaborative way. Mostly (79%) head teachers (M=4.17, SD=1.08) strongly agreed that computers and internet are used for students for developing language and cognitive skills, it also shows that, (67%) head teachers (M=3.88, SD=1.06) agreed that Students use internet to learn in an autonomous way.

v. Its results indicating that majority of the head teachers (91%) strongly agreed that ICT use in teaching and learning positively impact on student achievement and mostly (88%) heads teachers strongly agreed that ICT use in teaching and learning positively impact student motivation.

DISCUSSION

The purpose of this study was to identify the role and potential of ICT at Early Childhood Education level. For this purpose, descriptive statistics were used. The major research findings and conclusions were drawn from the study and organized around the research questions of the study as follows:

What is the status of early childhood education classroom?

Results showed that per class students strength is higher than the average number of teachers. There are 50 - 75 students in one class and only one teacher was teaching to them. This condition was more common in public sector school. No specific computer teacher for ECE classes available in the school. The schools had only one computer teacher which was not sufficient for the successful implementation of the ICT integration in ECE level. Findings also showed that mostly students were coming from under privileged background in public schools. The results were not consistent with the Ministry of Education, 2017 suggested ECE classrooms status.

How to utilize available ICT resources for its successful integration in ECE classrooms?

There was significant correlation between inadequacy and shortage of ICT resources and ECE teachers’ strength in level I/playgroup. There was also significant difference in inadequacy of ICT resources for males and females. The results were more consistent with the study reported by Verenikina in 2010 that both males and females would be at equivalent ICT tools usage level.
CONCLUSION AND RECOMMENDATIONS

This study concluded that the teachers involved in the study identified role and potential of ICT had overall positive impact on teaching and learning of preschoolers. The use of ICT helps in language, cognitive skills development of the students. The ICT tools application is more advance in private than public sector schools. ICT trained teachers are more active in using ICT tools. Head teachers’ responses revealed that schools had shortage of ICT resources and contents in national language. Teachers’ ICT application level was high and professionally trained but with inadequacy and shortage of ICT resources, it’s getting difficult to get required results at ECE level. Head teacher and teachers’ role in selection of contents, teaching methodologies and training courses was ignored in both teaching sectors. Overall opinion of the participants about the impact of ICT on teaching and preschoolers learning was positive. Students feel more motivated.

Following were the recommendations of the study.

1. Curriculum developers and practitioners may focus on the development of the contents in national language for ICT usage.
2. Government may take important measures for the successful implementation of ICT in public sector schools.

REFERENCES


