Role of ICT in the Universalization of Elementary Education

Sk Md Faruk

Abstract

Information & Communication Technology (ICT) is recognized as an important catalyst for social transformation, and an important tool for education. Integration of the ICT in education projects; also popularly called Technology in Education (TIE). The purpose of TIE was generally to familiarize students with the use and working of computers, and related social and ethical issues, as well as leverage on the power of the ICTs for teaching conventional subjects that get registered far effectively compared to conventional teaching –learning method. The integrated approach to technology in education (TIE) has prerequisites such as students use of technology create learning arte – facts, integrated with curriculum, focused on learning achievement and teacher designed instruction. The department of E-Department of Information Technology, Govt. of West Bengal, introduced computer based learning (CAL) system titled 'KYAN' (Vehicle of Knowledge) in a phased manner. The initiative was an effort to utilize ICT tools such as digital content, alternative power supply solutions, and capacity building programs to bridge the digital gulf and ensure sustainability. Here is the study to look into the opportunities that are provided by ICT for teaching and learning in primary school in literacy, numeracy, science, and 21st century competencies, the limitations of ICT and associated concerns in primary schools, the roles of teachers in ICT – enhanced teaching and learning in primary schools and the necessary and sufficient conditions to support the ICT – enhanced teaching and learning practices in primary schools.

Introduction

Sarva Shiksha Abhiyan (SSA) was launched with the objective to achieve universalization of Elementary Education and to fulfill the constitutional mandate of providing free and compulsory education for life to the children of age group 6-14 years. The reduction in drop out and repetition rate, enhancement in the achievement levels and information and making learning joyful are some of the objectives of SSA. It was felt that use of Communication Technology (ICT) may help in achieving the said objectives. Keeping this in view, a component of computer education was kept under the Functional Head of 'INNOVATION' in the framework of SSA. Under this component there is a provision of Rs. 50 lakh per district per year available to the States for CAL.

Department of School Education & Literacy, with the objective to strengthen the CAL programme constituted a Committee for formulation of Guidelines for computer (IT) Education under SSA at elementary stage. The Committee, Sarva Shiksha Abhiyan (SSA) was launched with the objective to achieve universalization of Elementary Education and to fulfill the constitutional mandate of providing free and compulsory education for life to the children of age group 6-14 years. The reduction in drop out and repetition rate, enhancement in the achievement levels and making learning joyful are some of the objectives of SSA. It was felt that use of Information and Communication Technology (ICT) may help in achieving the said objectives. Keeping this in view, a component of computer education was kept under the Functional Head of 'INNOVATION' in the framework of SSA. Under this component there is a provision of Rs. 50 lakh per district per year available to the States for CAL.

The committee is training of the teachers, creation of infrastructure, development and production of State-level statutory bodies like State Board of Education and SCERT. The first & most important tier is for training of teachers and necessary sensitization of states and their statutory bodies. The second tire suggested creation of infrastructure, development of e-teaching / learning material and formulation of scheme for making available additional resources. It was also suggested that pending formulation and approval of the scheme to mobilize additional resources, the available resources may be utilized for CAL and use of ICT in elementary education System.

Operational Definitions of the Terms

1. KYAN - Knowledge of vehicle It brings the benefits of ICT to children from disadvantaged communities.
2. CRW - Class room window is typically a teacher centered technology that can be created by streaming a live class room.
3. E learning - E learning is the technique of learning through the use of electronic devices beyond the reach of the classroom.
4. ICT - Information and communication technology.
5. SSA - Sarva Shiksha Abhiyan.

Statement of the Problem

Analyzing changes in the teaching and learning processes in primary education due to integration of ICT it is a challenge of with manifold, aspects, factors, strategies and approaches – and its own successes and failure. Through the project primary teachers and school policymakers have been listened to and observed. The goals have been to:

- collect, analyze and share the different peculiarities and aspects of the complex process of integrating ICT in primary children's learning experiences ;
- study the roles of teachers, children, parents and school leaders in this process ;
- collect a range of learning practices and learning outcomes that are being perceived, and identify learning outcomes that may be planned for and expected ;
- study and document the opportunities provided by ICT for teaching and learning (supporting the development of literacy, numeracy, scientific understanding, 21st century competencies, etc.) in primary schools;
- study and share reasons why teachers and leaders should use ICT in their everyday pedagogy and what especially in the contribution to primary education;
- study and show why governments should invest in integrating ICT into education, and how their already doing this;
- examine the limitations of ICT and the associated concerns in primary education.

Significance of the Study

Historically the teaching-learning process and the class room practices have been driven by a 'chalk and walk' focus with very little scope for interactivity. The delivery of the curriculum has been noticed in a linear way. The schools of West Bengal were no exception; however with the introduction of KYAN slowly and steadily this process is changing at least in the upper primary classes.

The findings of the ongoing monitoring and evaluation process shows a high degree enthusiasm in the upper primary and secondary classes, even for the main streaming of ICT enable learning; apart from the learning of the new subjects.

They become more capable of working by themselves and with others. Teachers can also authorize students to complete certain tasks with peers or in groups. Through collaborative learning with ICT, the students have more opportunity to build the new knowledge onto their background knowledge, and become more confident to take risks and learn from their mistakes.

They are required not only to listen to the native pronunciation from the dictionary, but also to learn the definitions and examples of a new vocabulary item. They then have to make a recording of their own pronunciation and provide examples of how this new word is used in context.

Before completing this task, they have to know which browser to use in order to search a suitable on line audio dictionary. They will have to browse several online dictionaries, and select the one that best newly something have to be added and altered both to – significance & finding.

Research Questions

The case study has concentrated its focus on a series of research questions, addressing key policy concerns relating to the use of ICT, the factors that can be shown to encourage appropriate use, and the implications of ICT for the universalization of Primary education. The research questions can be summarized as follows:

1. What use did the schools make of ICT?
2. To what extent was ICT a catalyst for educational reform?
3. Which factors influences the adoption and use of ICT in schools?
4. Did the adoption of ICT widen or narrow equity gaps?
5. What impact did ICT have on academic performance?

Objective of the Study

1. To study how communication technology improves the Sarva Shiksha Abhiyan.
2. To find out how teachers may be benefited by the use of communication technology.
3. To analyze the effect of communication technology on parents under Sarva Shiksha Abhiyan.
4. To concentrate on more focused teaching tailored to student's strengths and weakness, through better analysis of attainment of data.

Research Design

1. Type of the Study- Descriptive study.
2. Method of the Study - Survey method.

3. Population- Twenty eight schools from Howrah.
4. Sample- The sample consisted of fifty teachers from government, CBSE, ICSE board schools respectively. The teachers of these institutions were given sufficient time to complete the study sample provided.
5. Tools and Techniques - The tools used for data collection was a set of questionnaires consisting of 30 questions. The total number of questionnaire received after circulating it to the 28 schools were 300. After collecting the data from the teachers, the following techniques used were-A general table consisting of thirty questions and data collected are expressed in graph. The questionnaires consist of close ended questions where the responded had to choose from the options provided.
6. Procedure of Data Analysis- A general table consisting of the questionnaires and the responses from the government and private schools. The use of a Bar Graph showing the feedback as percentage from both government and private school.

Findings

With the initiation of ICT teaching learning practices a part from improving the morale of teachers, enhanced attendance, and improved retention of the core academic concepts as well as better recall. Early empirical testing and assessment carried out amongst the Upper Primary students from Class - V through Class – VIII has shown increase in the academic achievement of the students as is evident from the comparative weighted average scores of the last examination results compared with the previous time series.

It has been found out that ICT has a huge impact as it can motivate school students to learn different subjects. ICT can motivate school students by making the learning process more attractive by the use of interactive media technologies. Furthermore use of ICT not only motivates the school level learners to study a subject but also motivates other people to develop a more improved technology for the application of ICT school level. Some statistical analysis has also been done by some other researchers which show that web-based education has an impact as the motivator for learning among school students. Studies have shown that ICT solved the problem unavailability of study materials and expert advice for the school-level learners from remote areas and hence made learning easy for them. Also web-based education started an era of 24 X 7 learning where the school is open all the time whenever a learner wants to study she/he can do that. This is implemented by the use of ICT that is either by web sites of different institutions or organizations or by learning apps developed by organizations for smart phones which can be accessed by school students now a days. One important finding is that gender bias exists in the use and implementation of ICT in school level education system. Girls are tending to use web-based technology as communication and social networking techniques whereas boys are more interested in the technological and scientific application of e-learning.

Concern has been expressed that ICT may have benefits for particular groups of students, thus providing them with an advantage over others. It might, for example, have greater benefits for those with access to computers at home, appeal particularly to boys, or benefits the most able learners. On the other hand, some argue that ICT facilitates differentiated learning, allows students to work to their own ability, and motivates disenchanted students.

Appropriate use of ICT has been argued to increase academic standers through provision of a wide range of resources and more engaging learning experiences. Others have suggested that ICT may lower academic standers either as a result of the inappropriate nature of the resources available, or by encouraging a “cut and paste” culture inimical to real learning. The case studies examined teacher perception on these issues and in some cases collected objective quality data.

Conclusion

A revolution in the information technology sector and the emergence of web technology has made the human society to take a huge leap. The focus is now shifted from industry to information. The appearance of information technology has been the most important event at the start of twenty-first century. Information technology suddenly become an important element of our society, education is also no exception. We keenly accepted recent research findings which confirmed that primary education is the most formative period – together with the pre-primary stage – for any child’s personality, productive learning processes, and skills for learning and cognitive competencies. ICT encompasses all educational interventions that makes use of the internet. ICT is one way to learn, using web based techniques or tools in a learning process. Learners mainly uses computer to interact with the teacher, other people and learning material. ICT consists of technology that supports traditional classroom training and online learning environment. Primary education is also exceptional because in many countries most subjects at this level are taught by the same teacher. This fact and several others create a brilliant opportunity to integrate digital technologies into subject teaching, into cross-curricular activities and into 21st century skills development. Primary education is a playful realm in which teachers know very well that learning without play and positive motivation does not happen. Primary teachers are usually highly innovative and know that they have to learn and develop themselves continuously, for example, that they have to develop their own digital literacy, because only a digitally literate can harness these powerful forces towards new ways of learning. The outcome of our project will be a series of reports, the first of which is this one. In this report we decided to explore the roots and premises of the views that have pointed out the potential of digital technologies to support changes in primary teaching and to enhance new and different learning We presented a research literature review on the opportunities, limitations and concerns associated with ICT in teaching and learning processes in primary schools; we identified several principles that

are common to most of the national strategies for ICT in education; and we introduced a rich collection of different national and international initiatives networks, ands projects that have been or are being successfully implemented and could be of value for the reader. Integral to our study is collaborative with a sample of exceptionally innovative primary schools.

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