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INTRODUCTION OF ICT EDUCATION IN KERALA: A HISTORICAL ANALYSIS

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ABSTRACT :

Information and communication technologies has revolutionised the education system and is used as a means for improving the quality of education. Central and state government initiatives has laid a strong foundation for introducing IT enabled education, though many schools lags behind in effectively integrating ICT into the curriculum. High cost of equipments and software's, weak infrastructures, inadequate funds, lack of skilled ICT professionals, lack of appropriate organizational support, unwillingness of teachers to adapt to new technologies, poor subscription of internet, delay in maintenance are stumbling blocks on the adoption of ICTs in schools. This paper therefore examines the historical background of ICT education and the relevance of its integration in the present education system using secondary data. The article focuses upon the Government of Kerala's initiation of IT@ School project in order to have in depth analysis of its vision, objectives and needs.

KEYWORDS : *ICT, School Education, IT@ School, Digital Divide.*

INTRODUCTION

Kerala is unique for its development experiences such as high literacy rate, high level of NRI population, social development as well as increase in living standards, skilled man power, high growth of service sector, health care services and education. Apart from these ICT has grown at an incredible rate leading to a knowledge society. Technology- enabled education in India was introduced for the first time with the introduction of Computer Education in schools under the General Education Department as a centrally sponsored scheme of the Ministry of Human Resource Development, Government of India. The Genesis of ICT adoption in schools can be traced in tune with the following ICT initiatives:

- 1974 – Education Technology Scheme (ET) was introduced with 100 percent assistance of State Institutes of Educational Technology (SIET) by providing radio cum cassette players and colour TVs.
- 1993 – 1998 – CLASS Project (Computer Literacy and Studies in Schools) was introduced as a centrally sponsored scheme for educational institutions which aims at providing computer education and training education.
- 1998 – Under Prime Minister's initiative National Task Force on Information Technology and Software Development (IT Task Force) was introduced for imparting IT education. The major purpose of this was making computers accessible through three schemes namely – The Vidyarthi Computer Scheme, Shikshak Computer Scheme and School Computer Schemes.
- 1999 – 2003 – BOOT Model (Build, Own, Operate and Transfer) was initiated by fully utilizing the funds of State governments.

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- 2004 – ICT @ Schools scheme aims to promote computer literacy in the Government- Aided Secondary and Higher Secondary School to bridge the gap of digital divide between the rural and urban areas.

COMPUTER EDUCATION PLAN (CEP) -- KERALA

Advancement of modern technologies challenges the traditional methods of teaching and learning. Increased access to ICT enables a lifelong learning process having the power to raise the quality of general education to international standards. The use of computers, TV internet and other digital medias becomes tool to accelerate learning at all levels of education.

The computer Education plan of Kerala (CEP – Kerala) has been prepared in tune with the objectives envisioned in the vision 2020 document of Government of India. The report of CEP states that its main objective is to bring a major shift in the teaching - learning process in the secondary schools of Kerala by using ICT as an educational tool having the following characteristics:

1. To make 22 lakh students in Secondary schools of Kerala as ICT literate thereby enabling them to use technology as a learning tool.
2. To provide ICT literacy to empower teachers so that they could use it as a teaching tool.
3. Finally targeting to improve the quality of school education through speedy and efficient administrative mechanism.

IT in Education Vision 2010 -- Report of the IT-TASK FORCE

For the realisation of knowledge based Society, Government of Kerala constituted a task force to formulate "Vision 2010 on May 2000 by recognising the extra ordinary potentials of ICTs. It mainly targets the younger generation to fully reap the benefits of ICT. For a long time period the primary question was of "what are the viable ways of enhancing the quality of education at school level?" In finding a solution to this, greater importance was given in integrating ICTs in the classrooms. Introduction of IT as part of the curriculum and the use of emerging technologies in the area of education was the reason behind the setting up of this task force. It helps the new generation to compete with this information age in getting better access and use of information through ICTs. With a strong technological, educational and socio-economic base, Kerala has far reaching benefits in integrating ICTs in its present education system since it play a vital role in enabling equity and excellence. Introduction of ICTs in schools cannot be considered as a simple process rather it involves a continuous process of provision of other requirements such as academic, human resources development, technological, financial and institutional elements.

The major recommendations of the Task Force are highlighted as:

- The first and foremost move towards an ICT platform relies up on integrating it as part of the curriculum.
- ICT has to be an enabler, a tool for in-depth understanding as well as can be useful for instructional and reference tool for teachers.
- The integration of ICT at school level should have the potential to restructure the higher education also.
- By conducting various training, it aims at acquiring hundred percent digital literacy among teachers. As teachers are the facilitators, their skills and knowledge in computer literacy is significant.
- Emphasises the creation of Resource centres for conducting teachers training to update their IT knowledge and skills.
- Strong emphasis in the usage of ICT in imparting distance education.
- Institutions, teachers and students should be better networked.
- The availability of academic resources from apex organisations needs to be encouraged.
- A serious effort from Government, teachers, community and private enterprises are essential for this endeavour.

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- In order to buy hardware components in schools local community participation needs to be encouraged.
- Schools should also encourage community participation by opening up internet cafes besides the school hours. It could be run in partnership with private agencies on revenue sharing basis for the addition of the school's recourses for imparting IT education. The private parties can be allowed to conduct computer courses for raising computer literacy within the community.
- Ensuring teachers training, proper technological up gradation and content generation were also equally significant.
- Since imparting IT – enabled education is expensive; it can be synergised with other areas like e-governance, e-commerce, connectivity and bandwidth.
- Introduction of a school computer sponsorship scheme helps in acquiring more funds, donations along with buying computers from corporate foundations, IT companies, software technologies, Non – Resident India Associations (NRIs), etc also seems to be beneficial.
- For the procurement of mini loans international organisations can be approached.
- Key actions to be carried out is the integration of ICT into the school curriculum by developing adequate content along with teachers training and supplying adequate hardware components to schools.

IT@ SCHOOL Project – The Kerala Model of ICT Education

IT @ School is a project of the Government of Kerala with an intervention to integrate ICT as an effective tool in teaching and learning. It deals with the effort to integrate technology into the school curriculum, developing necessary contents, conducts teachers training and laid the foundation for enabling hardware in schools in order to raise the skills of teachers and curricular comprehension of the students to make them active users of technology.

Vision

ICT can be used as a driving force for bringing a radical transformation in the education system where ICT is not considered as a separate subject, but used as a tool in the teaching and learning process. Serious effort for the realisation of IT enabled Education in Kerala was studied by Prof. U.R. Rao Commission in 2000. Based on this report, in 2001 IT @ SCHOOL project was officially launched by Department of General Education, Government of Kerala. From the Year 2003 onwards IT as a compulsory subject has been incorporated in 8th standard. In the subsequent years, it was extended to classes 9th and 10th. As a result, IT examination was conducted for the first time in the state until then it was a separate subject in board exams. At its first phase, the implementation was carried out at the secondary school level. During 2009 – 10 which was further extended to upper primary (UP) level. In 2011, IT- enabled education was initiated form classes 1 to 10 and forms a compulsory subject from classes 8 to 10 having both theory and practicals. The primary objective of the programme is in using ICTs for learning various subjects' by assisting students to learn efficiently. The project incorporates diverse activities such as capacity building, content development, infrastructure development, satellite – based education and e-governance initiatives. From the year 2010 onwards, holistic integration of ICT – enabled education gained importance. On one hand, it focuses on IT instruction (software, hardware aspects and programming) and on the other it envisaged ICT- enabled education through various technologies and instructional channels.

Growing Need of ICT in the Education System

Kerala stood ahead in its social development indices. The experience of Kerala in its achievements in literacy rate also stresses the matter of quality of education. As the society is moving to a 'digital world', the technologies such as computers, Internet, satellite communications, etc brings spectacular changes in accessing information. The 'technology push' brings the world closer within the reach of humans. With rapid changes in the world due to the unprecedented growth of ICT, it is

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essential to integrate it into the education sector with an urgent need especially at the school education. IT in Education: vision 2010 therefore attempts to focus seriously to outline the role of ICTs in education.

"A society which is not capable of effectively utilizing the immense possibilities offered by ICT is said to be in a stage of underdevelopment". Hence ICT stood as a key enabler in bringing a major transformation in every aspect of education. Since, the development index of a society can be measured by the level and spread of computer literacy and IT-skills, the introduction of IT in the conventional curriculum and the pedagogy is unavoidable. The institutions such as District Institutes of Educational Training (DIET), the State Council for Educational Research and Technology (SCERT), State Institute of Educational Technology (SIET) and the state open school were the major centres in bringing the ICT as a prime component in school education. In spite of its unique academic progress in the Information era, the use of ICT helps to enhance the potential of new technologies and communication along by bringing social and educational achievements.

Agenda set up for Action

The agenda points out to the academic, human resources development, technological, financial and institutional domains. It requires the support from local community (Panchayat's), parents and the teachers. For laying a strong foundation for ICT – initiative, the following parameters are to be taken into consideration.

i.   Academic Action Points

The introduction of computer courses in the school curriculum is a noteworthy feature that enables the students in gaining computer proficiency. The proficiency level of student's can be increased through computer software, interactive multimedia's, internet, office tools and other such applications, so that it helps in self – directed study and for

teachers it can be used for instructional and reference tool. It should be ensured that there are sufficient numbers of computers with adequate computer labs so that each class can spend more number of periods per week. The computer - student ratio to be ensured is 1:5. A minimum of ten networked computers must be available for a class of fifty students. Each school should have adequate number of computer labs so as to enable all classes in the school to have access to labs even in alternative days.

The number of libraries in the state has to be provided with internet facility. Therefore students who cannot afford a computer or internet connection at home can better utilize this facility during off-school hours. It is essential to impart the skills of internet browsing and computer applications among the students.

ii. Human Resource Development

The determinant factor in enabling ICTs into the classroom relies upon the attitude, empowerment and confidence level of the teacher with due concerns and enthusiasm of parents. In depth training is at most required to implement ICTs as a tool in the classroom. As teachers are the key facilitators, they have to acquire digital literacy and should update their knowledge and skills continuously with addition of newer technologies. Having a proficiency in ICT has to be prescribed as the basic qualification for teachers along with the possession of personal computers for their use. Setting up of Resource Centres at the local level is to be encouraged for increasing the ICT skills and their applications among teachers. Local Area Development Fund (LAD) should be utilized for purchasing computers in schools along with providing loans to teachers for owning a PC.

iii. Technological Action Points

Devices with huge storage capacities, CD-ROMs, with large memory storage and connectivity are the pre-requisites for the integration of ICT in education. Offering courses through distant mode using modern communication technologies, takes education to an advanced level with high financial benefits.

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The concept of virtual university is an added advantage which offers the best possibilities of utilizing the technologies across the world.

iv. Financial Action

Provision of technology enabled education is comparatively expensive this can be ensured through the funds of panchayats, huge multinational companies or individual promoters. The help of private agencies can also be sought for the purpose of setting up of hardware facilities in schools. Community can also be made a part of the school by providing computer courses for adults with a nominal fee outside the regular school hours.

v. Institutional Action

The school community is given prime consideration in deciding the level and extent of ICT education along with the Government, teachers, community and private enterprises thus is a combination of state facilitated and community - managed approach. Curricular interface, teachers training and facilitation belongs to the part of the Government.

The parents and the opinion leaders in the society, active participation of the Parent Teacher Associations (PTAs) needs to be ensured. Mothers can also be given e-literacy using the computers in the schools for creating an efficient relation between parents and the school.

The encouragement of the private agencies in initiating ICT education in schools can underlie the development of infrastructure, curriculum linkages, and continuous teacher's training, preparation of training modules to teachers, imparting computer proficiency to students and generation of multimedia content for classroom instruction. As part of this each and every school has to develop its own website for sharing the achievements and views of students and teachers. There are end numbers of possibilities for adopting technology into teaching – learning process.

Vision by 2010

A thorough change is earmarked in the school education scenario through the use of ICT.
- Integration of ICT in teaching and learning within the curriculum of school and higher secondary.
- Ensuring access to computers and the Internet to all teachers and students of secondary and higher secondary schools.
- Adequate training for teachers in better use of ICTs.
- A mass repository of teaching – learning materials (E-resources) can be made accessible to schools.
- Providing proper connectivity to ensure easy access to educational resources throughout the world.

CONCLUSION

Integration of ICTs in the curriculum results in altering the conventional teaching methodologies by providing students technology enabled learning experiences. The availability of E-resources better engages students to excel over their academic achievements at the same time it expands access to education. Other alternatives of this includes the provision of infrastructural facilities, empowerment of teachers to acquire digital skills and proficiency, enhancement of teaching-learning methods and it's effective inculcation into the school curriculum. The multi-pronged approach adopted envisages to extend the scope of ICT as a part of integrating it in various subjects rather than limiting it as a separate subject.

The commencement of ICTs into the school education system had begun several years before, from its initial stage developments, it now takes an advantageous position to bring pertinent changes by the development of physical and technical infrastructure in schools, curricular support, enhancing teacher's capabilities through training programs, supplying adequate pedagogical contents. Improvements in Smart classrooms, High-tech schools, opening of separate digital portal for availing pedagogical contents, providing subject specific IT training for teachers, re-establishment of school ICT clubs, initiation of schools own web pages has put this massive initiative on the correct track.

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