

Role of Information and Communication Technology in the Professional Development Of School Teachers

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Abstract—Delineating the role of information and communication technology for the professional development of School teachers, the paper describes cohesive staff development programmers with a focus on curriculum components and skills needed for effective use of ICT in the classrooms.

I. INTRODUCTION

Technological advancement has contributed greatly to the acceleration of human progress in the recent past. Just ten years ago, very few people could have anticipated and even imagined the enormous explosion of communication world-wide and its profound effects on school teachers for teaching. This could be possible as a result of advancement in communication and information technology (ICT). ICT is defined as ‘Scientific, technological and engineering discipline and management techniques used in information handling and processing their applications, computers and their interactions with men and machines and associated social, economic and cultural matters.’ It entails ‘the use of hardware and software for efficient management of information, that is, storage, retrieval, processing, communication, diffusion and sharing of information for social, economic and cultural upliftment.’

The benefits of the new technology are of course immense for today’s ultra-modern life that is totally dependent upon it. E-mail, computer conferencing, chatting, world-wide web etc. have increased opportunities for students and teachers to converse and exchange work more speedily than before and more thoughtfully and safely without any delay. Its capability to record and analyze huge amount of data have become a tremendous force for human development. Through simulations and graphics, live laboratories can be created in the classroom. Consequently, the whole teaching-learning concept stands revolutionalized. ICT has not only changed our traditional notions of education but also of the role of teacher and classroom.

A belief promoted in research literature and amongst the administration is that school education can make imaginative or innovative use of ICT to enrich the learning environment and support student learning. ? It can be used to make students’ tacit knowledge public and help them

develop meta-cognitive skills to become more reflective and self-regulated learners. A shift from teacher-students to acquire the new millennium knowledge and skills.

The shift will take place in changing from a focus on teaching to a focus on learning. We are entering a new era of digital learning in which we are in the process of transition from broadcast learning to interactive learning. Today students no longer want to be passive recipients in the information transfer model of learning. Rather, they want to be active participants in the learning process. Therefore, education systems around the world are under increasing pressure to use ICT to teach students the knowledge and skills, they need in the 21st century.

At the same time, many are struggling to determine the impact of the use of ICT on student learning. With the proliferation of the ICTs, many school teachers are undertaking what they perceive to be innovation in their teaching by incorporating different use4s of ICT into their instructions. Currently, also higher education institutions in India, and likely elsewhere, are encouraging higher education to incorporate ICT into their teaching.

II. ICT AND PROFESSIONALISM

Professionalization is the process of upgrading a social-oriented occupation to make it more autonomous, more development-oriented as well as more accountable. The role of the teacher will change from knowledge transmitter to that of learning facilitator, knowledge guide, knowledge navigator and co-learner with the student. Therefore, challenge of the 21st century for us as education professionals is not only to impart knowledge but also to train students with skills to become better and competent learners, more independent, development-oriented and take advantage of opportunities offered by the changing world. It

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is the need to equip students with ability so that they translate bookish knowledge to real life situations.

Teachers being the key to effective use of web based tools and opportunities in schooling; they must become skilled at using them. It is the teachers after all who guide instructions and shape the instructional context in which internet and other techniques are used, it is their skill at this more than any other factor that determines the degree to which the students learn from their internet experiences. Therefore, teachers must be comfortable with ICT, able to apply it appropriately and converse easily with the help of new technological tools, researches and approaches. The role of teacher educators would shift to planning and development of ICT-based instructional design from traditional instructional design. It is, however, a ground reality that most of the teachers in India are not at all prepared to use technology in their teaching. Mostly those who have basic knowledge of IT; do not know how to apply these skills in classroom instruction. Therefore, professional development of school teachers in how to use ICT is essential. Unless teacher educators make effective use of ICT in their own classes, it will not be possible to prepare a new generation of teachers who would effectively use the new tools for learning.

Teachers in school are supposed to take full load of teaching from the very first day of their appointment without an orientation in the process of teaching which requires specific skills. Realizing this fact, both the National Policy of Education 1986 and the Programmed of Action 1986 commended a proposal for in-service training of school teachers along with orientation and subject refresher course for improvement of higher education. As a result, Academic Staff schools were set up in different geographical regions of the country, aiming at developing professional competencies of the newly appointed school teachers. But, there is a general feeling amongst school teachers that no attempt has been made till date by the ASCs for effective use of communication and information technology to augment a paradigm shift in teaching and learning styles that would require adequate training in technology and learning styles as well as adequate technical support.

III. COHESIVE STAFF DEVELOPMENT PROGRAMMES

For schools to remain competitive in the new millennium, integration of ICT in school teaching and particularly in teachers' training has currently been a topic

of much debate. ICT is not only an essential tool for teachers in their day-to-day work; it also offers them opportunities for their own professional development. It is possible only when teachers use ICT in their daily working. Thus, teachers should be given training in using the most modern technologies in the field of education, so that the students, whom they teach, also get opportunity to get up-to-date information with regard to the topics or subject they teach.

The term 'training' of school teachers often involves relatively sophisticated processes underpinned by the theoretical models of professional development and change over time in teachers' conceptions of teaching. Therefore, it is the right moment for ASCs to accept challenge for developing cohesive training and staff development programmes with an emphasis on learning and to provide adequate technical support that may assist the faculty in integrating technology into instructions. For that purpose, it is proposed that a set of cohesive staff development programmes, organized by the ASCs be implemented in three phases for career development of school academics.

1- After the appointment of an academic, there should be a three months grace period for joining an institution of learning. During this period, there should be a one-month pre-service training or an internship programme for development of instructional competencies and skills for integrating technology into instruction looms before joining the service in schools. This requires introduction to Windows, PowerPoint, Microsoft Word, Microsoft Access, Microsoft Excel, Microsoft Office and Courseware Education Development using Macromedia author ware, Website, ICT Course and LAN (Local Area Network).

2- After completion of 5 years of service, every teacher should be required to go through at least once for one-month subject refresher course to develop professional competencies in academics and research areas. Not only that, a project should be assigned to each of the teacher of refresher course to design and evolve live demonstration experiments in the classroom through simulation and graphics, using acquired knowledge and experience in modern technologies. Before a module, which has been produced for the purpose of demonstration experiment be whetted by experts at least going through two or three editing processes to ensure the level of exactness and reliability which is to delivered.

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3- The third phase of training of academics through orientation programmer should be completed before 8 years of active service to learn about the new information revolution and competencies of new educational paradigms.

IV. CURRICULUM COMPONENTS

For development of curriculum to achieve teaching and learning skills for pre-service teachers of the schools, the following components should be taken into consideration-

1- There should be a comprehensive training for traditional classroom teaching and instructions. Further, it should be supplemented by opportunities through computers-

i- To find basic software programmers that offer encyclopedic collections, drill and demonstration to refresh background knowledge, whenever required.

ii- To prepare viewer programmers through presentation software this can readily add visuals to script. These programmers can be made available on world-wide web also. Through this, teachers may be able to use classroom time for small group discussions.

iii- To extend discussions beyond the classroom through e-mail, chatting, conferencing etc. where students may ask questions safely without any hesitation, share ideas and remove mistakes and confusion. These connections also provide asynchronous cooperative learning activities.

iv- To use electronic communications so that teachers may share the idea throughout the world by joining groups where advanced level scholars share ideas and receive advice, support and suggestions from colleagues.

2- The academics should be trained for learning cycles in which opportunities be provided to the pre-service teachers-

i- To acquire skills for use of simulation and graphic techniques to generate live demonstration during teaching in the class.

ii- To prepare instruction guides for students and to post assignments.

iii- To use software for discussions and posing problems and introduce timely prompt to redirect the conversation.

CONCLUSION

Keeping futuristic view in mind, it is more important to prepare future teachers and teachers' who are in service, with the knowledge and skills of using ICT. Therefore, it is necessary that a well-defined component of ICT-based learning should be a part of pre-service school teachers' training curriculum. For in-service teachers, training programmers should be organized to make them skilled in order to introduce ICT in the teaching process to cope with the enormous knowledge explosion in the present century. In order that school teachers remain competitive in the new millennium, we must develop cohesive training programmers with emphasis on learning and adequate technical support to be provided to the Faculty that will assist integrating technology into instruction. Teachers need to develop skills to use ICT in the classroom for effective instruction.

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