PUNE RESEARCH ISSN 2454-3454
AN INTERNATIONAL JOURNAL IN ENGLISH VOL 2, ISSUE 5

ICT IN TEACHER EDUCATION

DR. SHARMISTA
Associate Professor
Dept. of Studies in Education
BGS. B .Ed. College
University of Mysore
Manasagangothri, Mysore – 06
Karnataka**, INDIA**

ABSTRACT

Today, integrating information and communication technologies (ICTs) to the work of teachers is a must. Several studies show that its use – which is not limited to the mere purchase of equipment – can contribute significantly to improving students' learning outcomes and optimising school management processes.Teacher education institutions are faced with the challenge of preparing a new generation of teachers to effectively use the new learning tools in their teaching practices. For many teacher education programmes, this daunting task requires the acquisition of new resources, expertise and careful planning.Information and communication technologies (ICTs) are a major factor in shaping the new global economy and producing rapid changes in society.Within the past decade, the new ICT tools have fundamentally changed the way people communicate and do business. They have produced significant transformations in industry, agriculture, medicine, business, engineering and other fields. They also have the potential to transform the nature of education-where and how learning takes place and the roles of students and teachers in the learning process.Teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change. For education to reap the full benefits of ICTs in learning, it is essential that pre-service and in-service teachers have basic ICT skills and competencies. Teacher education institutions and programmes must provide the leadership for pre-service and in-service teachers and model the new pedagogies and tools for learning. They must also provide leadership in determining how the new technologies can best be used in thecontext of the culture, needs, and economic conditions within their country. To accomplish these goals, teacher education institutions must work closely and effectively with K-12 teachers and administrators, national or state educational agencies, teacher unions, business and community organizations, politicians and other important stakeholders in the educational system. Teacher education institutions also need to develop strategies and plans to enhance the teaching-learning process within teacher education programmes and to assure that all future teachers are well prepared to use the new tools for learning.

INTRODUCTION

The young generation is entering a world that is changing in all spheres: scientific and technological, political, economic, social,and cultural(UNESCO,1998). Globally, educational systems are under great pressure to adopt innovative methodologies and to integrate new Information and Communication Technologies (NICTs) in the teaching and learning process, to prepare students with the knowledge and skills they need in the 21st century.Apparently, teaching profession is evolving from an emphasis on teacher-centered, lecture- based instructions to student-centered interactive learning environments. NICTs integration is understood as the usage of technology seamlessly for educational processes like transacting curricular content, students working on technology to do authentic tasks and developing technology supported products, providing authentic assessments and institutional development. Today a verity of NICTs can facilitate not only delivery of instruction but also learning process itself. Moreover, NICTs can promote international collaboration and networking in education and professional development. There is a range of NICTs options- from Videoconferencing through multimedia delivery to websites which can be used to meet the challenges teachers face today. In fact, there has been increasing evidence that NICTs may be able to provide more flexible and effective ways for lifelong professional development of teachers. Undoubtedly NICTs has brought about many challenges and opportunities for education.

The educational system needs to come to terms with these new challenges and take full advantage of the opportunities. If educational institutions have to ensure that their students leave the institutions as confident individuals capable of using new technology creatively and productively then their teachers should have the competence to integrate the emerging technologies and the digital content with all their operations. Therefore, the challenge for higher education institutions, particularly teacher education, has been to create a new generation of teachers capable of employing a variety of technology tools into all phases of academic, administrative, research, and extension functions. A teacher being a pivot in the process of teaching learning, knowledge of ICT and skills to use ICT in teaching learning has gained immense importance for today's teacher. A teacher is expected to know successful integration of ICT into his/her subject area to make learning meaningful. This knowledge development during pre-service training has gained much importance with the notion that exposure to ICT during this time is helpful in increasing student teachers' willingness to integrate technology for classroom teaching. ICT integration in institutions is being perceived as a necessity and is growing exponentially. The pervasive use of technology in all spheres of life, the knowledge economy and the paradigm shift together, generate demands on the institutions to adopt ways that help inculcate 21st century skills amongst students.

Steps towards ICT integration;

The ICT Education 2013 Survey on the use of ICT in Brazilian schools, proposes the following elements to be captured under teacher training content:

- Instructional practice;
- Content knowledge and curriculum support;
- Continuous lifelong learning;
- Introduction to the 21st century skills;
- Collaboration;
- Problem solving;
- Communication;
- Creativity and innovation;
- Self -regulation and initiative (Seo, 2013).

.

APPROACHES TO ICT INTEGRATION IN TEACHER EDUCATION

Use of ICT within teacher-training programs around the world is being approached in a number of ways with varying degrees of success. These approaches were subsequently described, refined and merged into four primary approaches as follows.

ICT skills development approach: Here importance is given to providing training in use of ICT in general. Student-teachers are expected to be skilled users of ICT in their day-to-day activities. Knowledge about various software, hardware and their use in educational process is provided.

ICT pedagogy approach: This approach emphasizes on integrating ICT skills in respective subjects, drawing on the principle of constructivism, pre-service teachers design lessons and activities that centre on the use of ICT tools that will foster the attainment of learning outcomes. This approach is useful to the extent that the skills enhance ICT literacy skills and the pedagogy allows student to further develop and maintain these skills in the context of designing classroom-based resources. Students who have undergone this type of training have

reported significant changes in their understandings associated with effective implementation strategies, as well as their self-efficacy as to their ICT competencies.

Subject- specified approach: Here ICT is embedded into one's own subject area. By this method teachers not only expose students to new and innovative ways of learning, but also provide them with a practical understanding of what learning and teaching with ICT looks and feels like. In this way, ICT is not an 'add on', but an integral tool that is accessed by teachers and students across a wide range of the curricula.

Practice-driven approach: Here the emphasis is on providing exposure to use of ICT in practical aspects of teacher-training also. Emphasizing on developing lessons, assignments etc. using ICT and implementing these in their practical work experience at various levels, the students are provided with an opportunity to assess the facilities available at workplace and effectively use their own skills to manipulate these facilities. Based on the concept that the pre-service teacher is a learner, manager, designer and researcher, he is expected to research their practicum school's ICT facilities, design ICT activities with their tutor-teacher, manage those activities in the classroom, and evaluate their effectiveness in terms of student learning (http://ww.nd/edu.au). Ideally, an integrated approach is to be followed for developing ICT skills in teaching. Whatever may be the approach followed in the institutions to develop knowledge about ICT, it has its own limitations and coupled with other reasons, they are not making student-teachers fully confident of using ICT in their day-to-day classrooms and other situations. In the opinion of authors, all the four approaches are required to develop awareness of expert level skills in student-teachers.

CHANGING ROLE OF TEACHER EDUCATOR

Teaching is a challenging and rewarding profession where teachers must perform many roles.Teachers must adapt to a new way of teaching by managing more open ended discovery by students. This means shifting roles from a teacher to a facilitator who provides resources, monitors progress and encourages students to problem solving. Teachers reap benefits when they see how excited their students are about applying their knowledge to solve a problem. Teachers must teach students to manage their own learning. The result will be students become more creative and able to apply their learning to life's challenges.In facilitating learning teachers find that working with their peers offers them more resources and ideas to share with students in their classrooms. Recent developments of innovative technologies have provided new possibilities to teaching profession but at the same time have placed more demands on teachers to learn how to use these technologies in their teaching. (Robinson and Latchem, 2003). When reviewing the evidence of when teachers are trained to use ICT in education, most teachers seem to be trained in-service. In Africa teacher professional development and training programmess for ICT focus on in-service teachers, but increasingly so there is a shift towards the inclusion ICT related training within pre-service teacher

training programmes (Farrell and Isaacs, 2007). However, while many ICT skills are acquired outside of the formal teacher training system, additional effort needs to be made to make ICT a mandatory rather than optional part of the curriculum. Many national curricula in Europe include ICTs and it is increasingly becoming an examined subject in Africa and Asia as national strategic development documents recognise the importance of ICTs in teacher capacity-building and professional development. Despite the increased emphasis on training teachers on the use of ICT, decisions to make such training compulsory are not always certain. In the case of Rwanda, such courses in teacher training programmes have not always been a prerequisite for teaching where it was officially considered an optional subject within its national curriculum (Davis, 1995).Under the changing scenario, there is a need to redefine the role of a teacher-educator. The National Council of Teacher Education, Jaipur (NCTE), based on a thorough job analysis, has come out with three areas in which a teacher-educator needs to acquire mastery. These are i) five performance areas; ii) ten competency areas; and iii) five commitment areas. For the successful integration of ICT in teacher education, the teacher in addition to taking up the role responsibilities mentioned in these areas, must shoulder the additional, rather survival responsibilities outlined below :-

- Act as a role model for pre-service trainees and in-service teachers, demonstrating the use of technology across the curriculum.
- Encourage technology integration among the trainees, colleagues, teachers and parents.
- Be involved in planning and implementing ICT professional development training.
- Be up-to-date with the latest technological developments and advise the institutions concerning technology advancements and upgradation.
- Interact through e-mail/forum/communities/blogging with trainees, participating schools, and parents.
- Aid in the implementation of technology plans of the institutions.
- Plan, design, and demonstrate the use of multimedia applications for instructional use through multimedia projects.
- Examine a variety of evaluation and assessment tools including electronic portfolio assessment.
- Become active, competent online users of telecommunication services and act as model in the use of internet as an instructional tool.
- Direct trainees and teachers to digital resources that will be able to answer their questions.
- Address issues related to acceptable user policies, student safety, ethics, security, copyright, etc.
- Be involved in marketing the best practices of technology integration.
- Manage the available resources more productively to face the ever increasing financial crunch.
- Use information literacy to access, evaluate, and use information from a variety of sources.

- Have the competencies in software evaluations and advise the institutions in making the right choices.

REFERENCES

Davis, N. (1995)International Encyclopedia of Education 3rd ed, ed. by Penelope Peterson, Eva Baker, and Barry McGaw. Elsevier

Farrell, Glen and S.Isaacs (2007). Survey of ICT and Education in Africa: A Summary Report, Based on 53 Country Surveys Washington, DC: infoDev / World Bank

Robinson, B., & Latchem, C. (Eds.) (2003). Teacher education through open and distance learning. London: RoutledgeFalmer..

Seo, J. (2013). Smart education initiative: Looking ahead to the schools of tomorrow: Use of ICT in education Case from the Republic of Korea . In Brazilian Internet Steering Committee (2013). ICT Education 2013 Survey on the use of ICT in Brazilian schools.

UNESCO(1998). World Education Report,Teachers and Teaching in a Changing World.