

## THE RATIONALE AND FRAMEWORK FOR EVALUATING THE ICT USE IN TEACHER EDUCATION

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**Abstract :** This study investigated that the quantity of computer and ICT use in teacher education institutions is less and it is mainly focused on the learning of ICT skills which takes optimum time computers are used. The framework is then improved towards a new framework that can be effectively used to evaluate information and communication technology use in pre-service teacher education. In this study the independent variables are derived from computer use within the institution, some other extraneous factor may have impact on the results. Those factors may be computer use at home, friends home and cyber or internet centers by the respondents. The study concludes that the reality rhetoric gap of the impact of ICTs in teacher education institutions be evaluated from periodically to ensure that the quality with program objectives are met. The result shows that there is an urgent need to conduct intensive training to all the teacher educators in the colleges of education. The curriculum developers should develop global content for serving the local needs and make it to available to all the colleges of education online as well as offline content or blended learning modules. Several factors have been cited as responsible for low quantity of computer use in colleges of education. Some of these factors are; attitude towards new technologies, poor management, lack of local content serving local needs, shortage of equipments.

Key Words: Rationale, Evaluation Framework, ICT-CFT and ICT Use in Teacher Education.

### Introduction

As technological advances continue to evolve and proliferate, teachers, teacher educators and administrators have sought to integrate technological innovations into the classroom. Introducing ICTs in the education sector can be quite costly in terms of up-front costs (for acquiring basic infrastructure) and the recurrent costs (maintenance and human resources training and development). With this rise in implementation and demand comes an increased need to evaluate the effectiveness of technology in teacher education. A proper evaluation of ICT-CFT use in education in general and teacher education in particular will help us to learn from past experiences, improve service delivery, plan and allocate resources, evaluate policies and demonstrate results as part of accountability to key stakeholders. This is

important since a bigger chunk of our implementation funds (MHRD NME-ICT) are to be provided for by our development partners (Intel Teach to Teachers, Microsoft IT Academy) and volunteers. The stakeholders will want to know whether the performance indicators are being achieved.

It provides a rationale and framework for the process of training teachers and their associates to adopt ICTs in education. It draws upon the new views of the learning process outlined and describes appropriate approaches to professional development and organizational change. A detailed framework and objectives for the ICT in teacher education are provided in the following sections. ICTs are in the early stages of development, so it is important to undertake a careful analysis using an approach to develop an organic strategy for the growth and development of education and teacher education that takes advantage of ICTs. The vision is not simply of ICTs, but of better education facilitated through the adoption and promotion of ICTs.

### **Objectives of the Study**

1. To evaluate the overall use of ICTs in colleges of education.
2. To identify the strengths and weaknesses of ICT-CFT in evaluating ICT use in colleges of education.
3. To improve the ICT-CFT to meet evaluation needs of ICTs in teacher education.

### **Methodology**

The descriptive survey research design has been used in the study. According Isaac and Micheal (1997) descriptive method is used “...to describe systematically the facts and characteristics of a given population or area of interest, factually and accurately.”

According to Isaac and Micheal (1997) “Descriptive studies are generally categorized into two main groups.” These are, survey research and direct observation research. Survey research makes use of questionnaires for data gathering, while direct observation research makes use of observations. These indications make it clear that the current study is in fact a survey research, as it uses questionnaire, and Interview towards the ICT-CFT to collect data from the subjects.

### **Population and sample**

The population of the study was Colleges of Teacher Education in Karnataka state. The researcher has selected all the affiliated Colleges of Education in Rani Channamma University jurisdiction as sample of the study.

## Data Collection Tools, Procedure and Analyses

The researcher has personally visited to each college and administered the following tools to collect the data, the tools have been used in this study are:

- Questionnaire for teachers, principal and students
- Interview schedule for teachers, principal and students.

## Statistical techniques

Descriptive and Inferential statistical techniques will be used for analysis of the data.

## Scope and Limitations of the Study

This study was taken up to evaluate the overall use of ICTs Using the Information and Communication Technology Competency Framework for Teachers (ICT-CFT), to identify the strengths and weaknesses of ICT-CFT in evaluating ICT use in Colleges of Education and to improve the ICT-CFT to meet evaluation needs of ICTs in Teacher education. The survey was conducted by personally visited to each college of education under Rani Channamma University, Belagavi. The study is limited to Information and Communication Technology Competencies of the student teachers, teacher educators and principals of the colleges of education, under Rani Channamma University, Belagavi.

**The Society for Information Technology and Teacher Education has identified basic principles for development of effective ICT teacher education (SITE, 2002).** Those are:

- *Technology should be infused into the entire teacher education programme:* Throughout their teacher education experience, students should learn about and with technology and how to incorporate it into their own teaching. Restricting technology experiences to a single course or to a single area of teacher education, such as methods courses, will not prepare students to be technology-using teachers. Pre-service teacher education students should learn about a wide range of educational technologies across their professional preparation, from introductory and foundations courses to student teaching and professional development experiences.
- *Technology should be introduced in context:* Teaching pre-service students basic computer literacy-the traditional operating system, word processor, spreadsheet, database, and telecommunications topics is not enough. As with any profession, there is a level of literacy beyond general computer literacy. This more specific or professional literacy involves learning to use technology to foster the educational growth of students. Professional literacy is best learned in context. Pre-service students should learn many uses of technology because they are integrated into their coursework and field

experiences. They should see their professors and mentor teachers model innovative uses of technology; they should use it in their own learning, and they should explore creative uses of technology in their teaching. Teacher educators, content specialists, and mentor teachers should expose pre-service teachers to regular and pervasive modeling of technology and provide opportunities for them to teach with technology in secondary level classrooms.

- *Students should experience innovative technology-supported learning environments in their teacher education programme:* Technology can be used to support traditional forms of learning as well as to transform learning. A PowerPoint presentation, for example, can enhance a traditional lecture, but it does not necessarily transform the learning experience. On the other hand, using multimedia cases to teach topics that have previously been addressed through lectures may well be an example of a learning experience transformed by technology. Students should experience both types of uses of technology in their programme; however, the brightest promise of technology in education is as a support for new, innovative, and creative forms of teaching and learning (SITE, 2002).

### **Teacher Education in and through ICTs**

The most obvious technique for professional development for teachers is to provide courses in basic ICTs knowledge and skills, delivered by experts in national and regional centres. These types of courses, taught at training centres or universities or colleges of education with a syllabus set by university or national agencies (NCTE/UGC), have been a common practice in India. However, this approach has had limited success without follow-on training and support, as compared to effective use of ICTs by trained teachers. Similarly, courses for teachers in particular software and hardware applications are difficult to implement in a way that result in use of these applications in classroom instruction or other professional practices without additional support. The development of ICTs does not improve education if the focus is on ICTs. The vision must focus on what ICTs can do to improve education.

Over the last decade, many countries especially India that included ICTs in education were slowly to include it in teacher education. Recently national agencies like UGC and NCTE has begun to realize the importance of educating teachers at the beginning of their careers. Younger people are more likely to be familiar with ICTs, to be adaptable, and to not yet have formed habitual modes of instruction that are more difficult to change with more experienced teachers. It is in the pre-service stage that they are most open to learning how to infuse technology into instruction. Based on their long experiences with traditional modes of learning, teacher educators may find it challenging to incorporate ICTs into their own instructional

practices. They may also lack experience in developing the complex partnerships between higher education and schools that facilitate technology-rich contexts for training student teachers. To bring this about, it is usually necessary that the faculty be held accountable to standards and that the institution provides both incentives and resources to support technology-rich programmes and initiatives.

One approach that encourages collaboration between the teacher education programme and the community is the formation of computer clubs for students interested in computers and education. This approach was used successfully in Russia and works well where computing resources are limited. Care must be taken, however to ensure that the emphasis is on education rather than on games or competitions. Peer tutoring models are very effective in club settings and may develop into reciprocal mentoring with teachers in which the students provide ICT training for peers and teachers and the teachers mentor the tutors' developing skills as teachers. Peer tutoring is a relatively common approach in classrooms of cultures around the world. This approach is effective even when teachers have little ICT skill and knowledge. Community members may also serve as teachers, tutors, and co-learners and the whole community may benefit economically because of an increase in the ICT skills among diverse members of the community. ICTs may also support effective professional development of teachers into how to use ICTs. A limited initiative to integrate an innovative approach to teaching and learning with one new technology for a large population of teachers can be an important early step for a nationwide strategy.

### **A Framework for ICTs in Teacher Education**

Planning for the infusion of ICTs into teacher preparation programmes, several factors important to a program success must be considered. It provides a holistic framework to assist in designing the integration of information and communication technologies (ICTs) into teacher education. The framework is coherent with the context provided by today's society and reflects more recent understandings of the nature of learning, including aspects of learning communities during the school years and beyond into lifelong learning. The holistic framework will help teacher educators and administrators consider the cultural and educational system context, technology resources, and other factors that are important in planning the integration of technology into the pre-service curriculum. Limited technology resources and conditions of rapid change in educational, economic and political systems challenge many contexts of this curriculum. In some regions, the shortage of teachers, teacher educators, facilities and standards has been chronic for years and has reached crisis proportions. Access to ICT resources may also be quite limited.

A generic ICT in teacher education curriculum framework is provided in Figure 5.1. The encompassing oval underscores that the framework should be interpreted as a whole. To select parts or to simply copy the framework in rote fashion without taking care to understand the synergy of the whole would be a mistake. As the term synergy implies, the whole is more than the sum of its parts. For example, an approach resulting from informed leadership and vision is essential for ensuring that all the components of planning and implementing a technology integration plan are present and that they support one another.

The framework was designed by representatives of international projects to assist policy makers, course developers, teacher educators, and other professionals who are charged with developing the use of information and communication technologies (ICT) in teacher education. The model will help assure that national and local infrastructure, culture and context, among other factors, will be considered in designing new curricula, and that curricula will be kept up to date, as new developments are forged in education and ICTs.

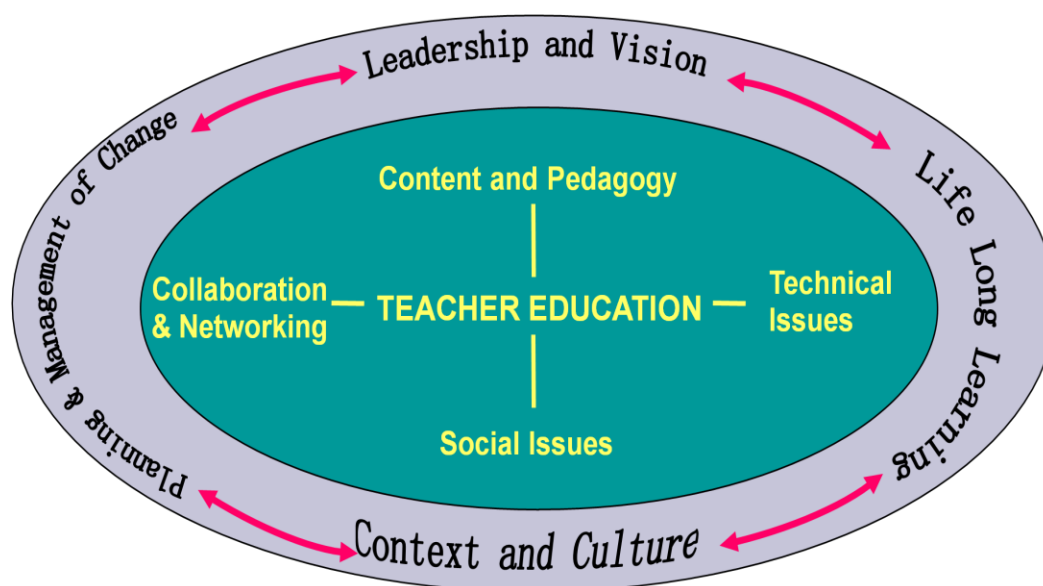
Figure 5.1 shows the curriculum framework is comprised of four clusters of competencies encircled by four supportive themes. The curriculum framework also suggests that each teacher is allowed to interpret the framework within his or her context and personal approach to pedagogy, which is always related to the subject discipline or content area, rather than to the technology itself. The four themes that bind the curriculum as a whole are described briefly below, followed by descriptions of the four core competencies.

### **Four Themes**

*Context and Culture* identifies the culture and other contextual factors that must be considered in infusing technology into teacher education curriculum. It includes the use of technology in culturally appropriate ways and the development of respect for multiple cultures and contexts, which need to be taught and modeled by teachers. *Leadership and Vision* are essential for the successful planning and implementation of technology into teacher education and require both leadership and support from the administration of the teacher education institution. *Lifelong Learning* acknowledges that learning does not stop after school. In common with the other themes, it is important that teachers and teacher preparation faculty model lifelong learning as a key part of implementation, and as an ongoing commitment to ICTs in teacher education. *Planning and Management of Change* is the final theme, born of today's context and accelerated by technology itself. It signifies the importance of careful planning and effective management of the change process.

These themes may be understood as a strategic combination of approaches that help teacher educators develop the four core competencies. The core competencies may be seen as clusters of objectives that are critical for successful use of ICTs as tools for learning.

Figure 1 Framework for ICTs in Teacher Education



Source: UNESCO's Planning Guide: Information-Communication Technologies in Teacher Education (2002)

### Four Competencies

The ICT competencies are organized into four groups. *Pedagogy* is focused on teachers' instructional practices and knowledge of the curriculum and requires that they develop applications within their disciplines that make effective use of ICTs to support and extend teaching and learning. *Collaboration and Networking* acknowledges that the communicative potential of ICTs to extend learning beyond the classroom walls and the implications for teachers development of new knowledge and skills. Technology brings with it new rights and responsibilities, including equitable access to technology resources, care for individual health, and respect for intellectual property included within the *Social Issues* aspect of ICT competence. Finally, *Technical Issues* is an aspect of the Lifelong Learning theme through which teachers update skills with hardware and software as new generations of technology emerge. As a final reminder of the holistic nature of this curriculum, the model illustrates the interdependence of the themes and competencies all themes interacting with all competencies. The following is a description of the four competencies.

### Pedagogy

The most important aspect of infusing technology in the curriculum is pedagogy. When implementing the pedagogical competencies for infusing technology, the local context and the individual approach of the teacher linked with that of their subject discipline must be paramount. Teachers move through stages as they adopt ICTs. Initially, the teacher adopting



technology applies it simply as a substitute for current teaching practice where technology is not used (e.g., teacher lecture becomes electronic presentation supporting lecture, students writing papers by hand become students writing papers using a word processor, course syllabus on paper becomes course syllabus online). The adaptation of ICTs by teachers should (and does) challenge and support changes in teaching practice, building upon individual pedagogic expertise. As teachers' pedagogical practices with new technologies continue to develop, and organizational support and access to ICTs grow, it becomes possible to move beyond the adaptation of ICT applications that fit with existing practice.

Professional teachers' educators continually develop their pedagogical use of ICTs to support learning, teaching, and curriculum development, including assessment of learners and the evaluation of teaching, they will:

- Demonstrate understanding of the opportunities and implications of the uses of ICTs for learning and teaching in the curriculum context
- Plan, implement, and manage learning and teaching in open and flexible learning environments
- Assess and evaluate learning and teaching in open and flexible learning environments

### **Collaboration and Networking**

ICTs provide powerful new tools to support communication between learning groups and beyond classrooms. The teacher's role expands to that of a facilitator of collaboration and networking with local and global communities. The expansion of the learning community beyond the classroom also requires respect for diversity, including inter-cultural education, and equitable access to electronic learning resources. There is growing evidence that communities learn through collaborative activities that reflect diverse cultures in authentic projects that serve society. The development of teachers' competencies in networking and collaboration are therefore essential to ICTs in education. Through collaboration and networking, professional teachers promote democratic learning within the classroom and draw upon expertise both locally and globally. In this process, they will:

- Demonstrate a critical understanding of the added value of learning networks and collaboration within and between communities and countries
- Participate effectively in open and flexible learning environments as a learner and as a teacher
- Create or develop learning networks that bring added value to the education profession and society (locally and globally)



- Widen access and provide learning opportunities to all diverse members of the community, including those with special needs.

### **Social and Health Issues**

The power to access information and communication technologies brings increased responsibilities for everyone. Legal and moral codes need to be extended to respect the intellectual property of freely accessible information. Copyright applies to web resources, too, regardless of the ability of the user to purchase the rights. This respect can be modeled in classroom practice with students from an early stage. The challenges faced by society, locally and globally, by adoption of technology should become part of the curriculum in a way that involves learners and helps them to develop an effective voice in the debates. Health issues of ICTs also need to be addressed. For example, prolonged engagement with ICTs (including screens and keyboards) requires appropriate support for the body, especially the hands and back. Similarly, hazards of electricity and other power sources require care and the modeling of safe practice. The technology standards for students and teachers from the International Society for Technology in Education (ISTE) offer guidelines for social issues, under the topic of social, ethical, legal, and human guidelines relating to the responsible use of technology.

Professional teachers need to understand social and health issues surrounding ICTs and apply that understanding in their practice. Specifically, they need to:

- Understand and apply the legal and moral codes of practice, including copyright and respect for intellectual property
- Reflect upon and lead discussion of the impact of new technology on society, locally and globally
- Plan and promote healthy use of ICTs, including seating, light, sound, and related energy sources (including electricity and radio signals).

### **Technical Issues**

Technical issues regarding integration of ICTs into the curriculum include the technical competencies and provision of both technical infrastructure and technical support for technology use throughout the curriculum. Technical competencies of the individual are perhaps the most obvious but perhaps the least important in the long-term because use of technology should ultimately become transparent. When technology is robust and used competently, it moves from the foreground to the background and remains essential. This is similar to the process of gaining any new skill set, such as riding a bicycle. Each new skill must be consciously attended to and practiced until it becomes an automatic response. Competent bike riders do not focus on balance and the pedals of the bike, they focus on navigation and safety. However, we do recognize that in many contexts, the lack of technology competence,

infrastructure, and technical support can create barriers to access and reliability resulting in diminished support for the curriculum. Additional technical support or training is therefore advised, depending on local circumstances.

Simply providing the technology for learners and teachers is not enough. The type and level of access is also important. ICTs will improve learning very little if teachers and students have only rare and occasional access to the tools for learning. Reasonable access to ICTs has been shown to be important for the acquisition of competence with hardware and software, especially for teachers. For example, provision of portable computers is an important strategy for ICTs teacher education. Teachers with portable computers can use them for both teaching in school and for other professional activities elsewhere.

Professional teachers, provided with reliable technology infrastructure and technical assistance, demonstrate continual growth in their skill with ICTs and knowledge of their current and emerging applications within education and local and global society. Specifically they are able to:

- Use and select from a range of ICT resources to enhance personal and professional effectiveness
- Willingly update skills and knowledge in the light of new developments.

### General Framework for ICT Monitoring and Evaluation in Education

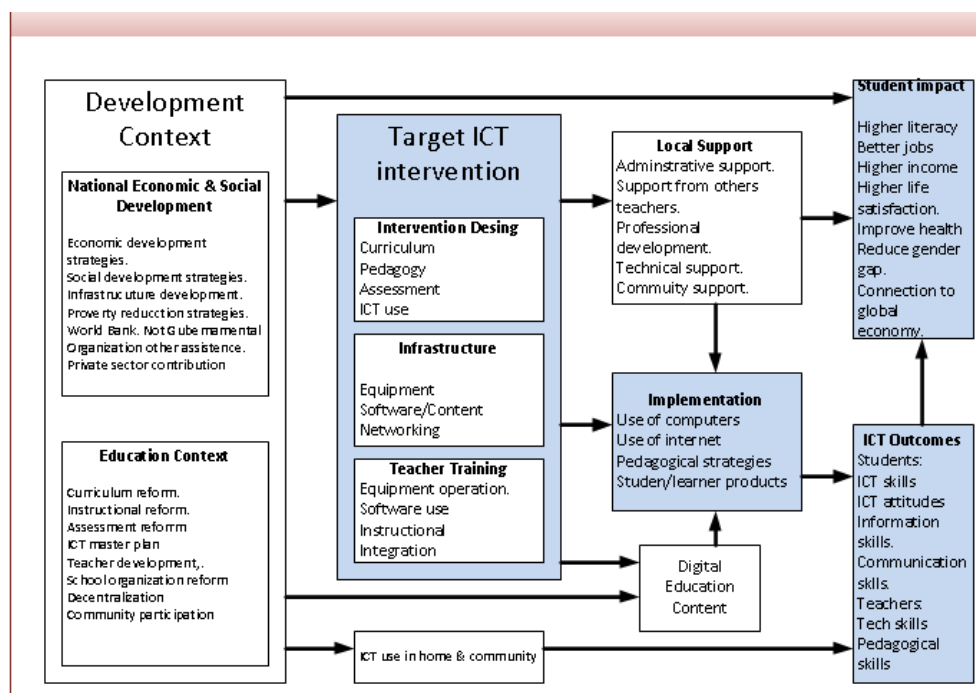


Figure 2 Conceptual Framework for ICT Monitoring and Evaluation (InfoDev, 2005)

This general conceptual framework for ICT monitoring and evaluation takes into account all the broad development concerns including context-sensitive issues related to ICT use for educational development. The use of ICT and its impact should be considered within this broad development context. Once it is established, and the role of ICT is identified, then a plan for evaluation can be designed. While the framework identifies all the ICT interventions that need to be evaluated, this study is concerned with the teacher training component. The teacher training component has been divided into four key areas:

- Equipment operation
- Software use
- Instruction
- Interaction

These key components informed the development of the proposed framework. In the proposed framework, new terminologies proper to teacher education as a discipline have been used to express the above mentioned components. In the proposed framework, the terminologies have been used as shown in the following table 5.1.

**Table 1 Comparison of terminologies used in the general framework for monitoring and evaluating ICT in education and the proposed framework for evaluating ICT in teacher education.**

<b>General Framework for ICT monitoring &amp; evaluating in education</b>	<b>Proposed framework for ICT evaluation in teacher education.</b>
Equipment operation	ICT Usage Skills
Software use	
Instruction	Content and Pedagogy
Interaction	Collaboration and Networking

The proposed ICT framework incorporates the social and health issues components to take of the increase need for teachers to address the challenges posed by adoption of technology in the society, locally and globally.

## Proposed ICT Framework

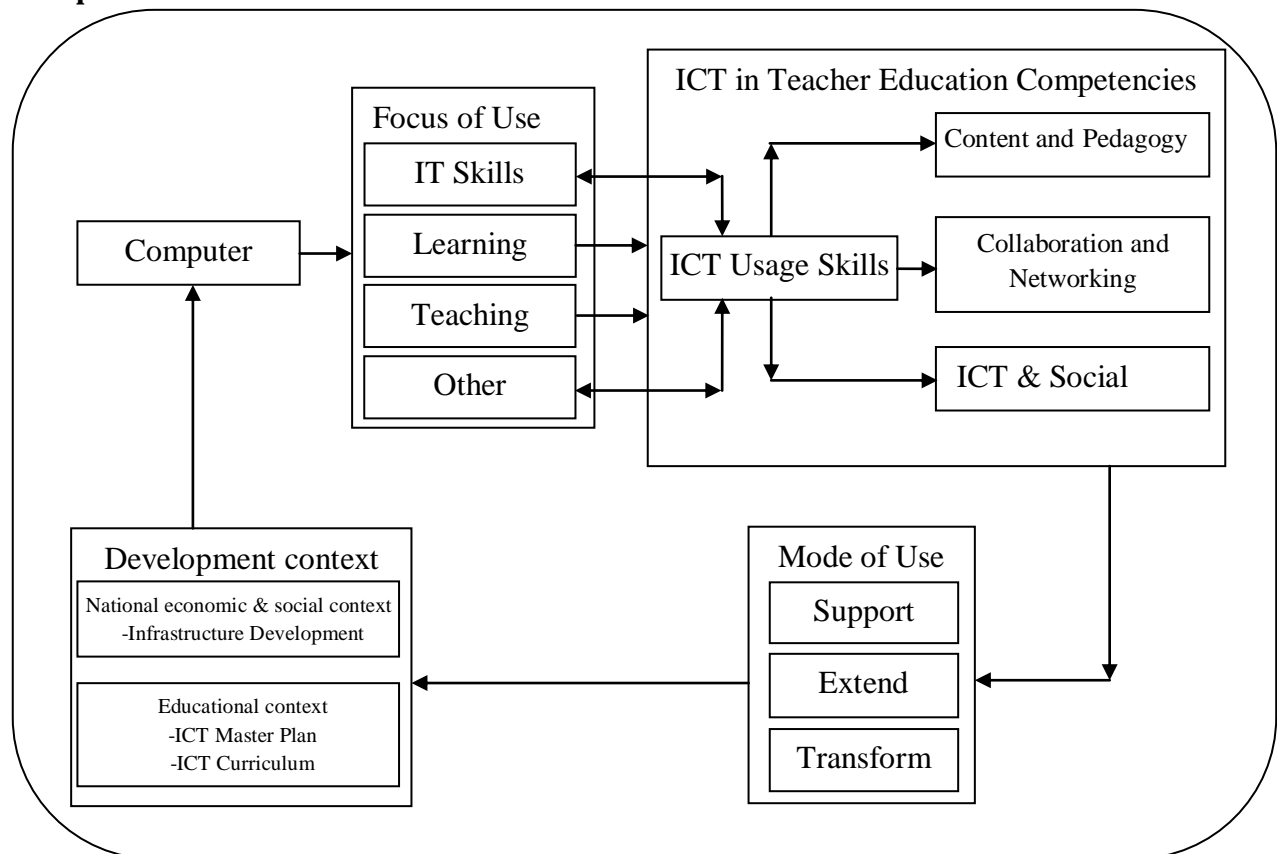


Figure 3 Proposed ICT Frameworks

## Proposed Competencies

Effectiveness of the competency framework for teachers as well as computer practice framework indicated that it was reliable for measuring quantity of computer use but the focus and mode dimensions were not reliable when applied to secondary descriptions of computer use. Several respondents commented that the difficulties encountered were due to lack of clear and detailed informative indicators. This lack of clear indicators on which to measure the focus and mode dimensions and made the research to measure those dimensions were indirectly as explained in the earlier chapter four in detail. The new framework proposed some competencies on which indicators could be based. The teacher educators were asked through the questionnaire to rate them on a three point Likert scale consisting of Very necessary, Necessary, and Not necessary. The following results were got from 258 teacher educators who answered the question.

**Table 2 Rating of the proposed competencies and indicators by the teacher educators**

Dimension	Frequencies of teacher educators	Percentage of teacher educators
Very necessary	68	26.36%
Necessary	138	53.49%
Not necessary	52	20.15%
Total	258	100%

The above table 5.2 reveals that the 26.36% of the teacher educators considered the competencies and indicators proposed in the new framework were very necessary, 53.49% of the teacher educators as necessary and 20.15% of the teacher educators considered them as not necessary.

### Development Context

The best practices in the integration of ICT into teacher education points to the guiding principles are proposed and recommended by international bodies. These best practices and guidelines can be adapted to meet the specific needs of every nation. International bodies like UNESCO (2002), InfoDev (2005) and SITE (2002) have recommended some guidelines to be followed when implementing ICT in teacher education.

The indicators of good ICT uses in teacher education that are set up at the national level include:

- The ICT policy through which the government articulates his levels of support and commitment towards ICT implementation at the institutional level.
- The ICT infrastructure which enables to the internet.
- The ICT curriculum guide to the application of ICT in teacher education.

These are direct and indirect effect on computer use at the institutional level.

### Computer Use

The quantity of computer use as a proportion of the available time for the learning, the dimension is concerned with the proportion of the college day during which one or more computers are in use by the student teachers or teacher educators, the college day is taken to mean the time when student teachers are in college and includes rest time, the number of student teachers using a computer is relevant or irrelevant and the number of computers in use is relevant or irrelevant. In this new framework, the learning time includes all the eight hours (as per UGC guideline) student teachers are in college of education, given a strict and tight schedule for lessons in colleges of education, then student teachers make use of computers during the rests.

## Focus of Use

It explores the purpose of the computers use. The dimension deals with the objectives underlying the computer use (Twining, 2002). This dimension is subdivided into four parts in the proposed framework.

- Information Technology Skills: Using computers to help students to acquire computer skills.
- Learning Tool: Computer supports the learners to any aspect of their learning other than IT. Student teachers applying IT in classroom activities like seminar, assignments and projects etc.
- Teaching Tool: Focus is on how teacher educators use the computers to create better learning environments.
- Other: The use of computers for other purposes that except, IT skills, teaching-learning. It includes objectives that do not relate directly to learning and teaching.

## ICTs in Teacher Education Competencies

These competencies that teacher educators and student teachers should have in order to use ICT effectively, these are in line with the SITE (2002) basic principles for development of effective ICT in teacher education, these are as follows:

- Technology should be infused into the entire teacher education program. Student teachers should learn about and with technology and how to incorporate it into their own teaching.
- Technology should be introduced in context. Pre-service student teachers should learn many uses of technology because they are integrated into their course study and field experiences. Teacher educators should expose the pre-service student teachers to regular and pervasive modeling of technology and provide opportunities for them to teach with technology.
- Student teachers should experience innovative technology supported learning environments in their teacher education program.

## ICT Usage Skills

In the proposed ICT framework, ICT usage skills support all the areas of technology use in teacher education. This approach is taken because technology should pervade the entire teacher education program (SITE, 2000). Indicators for evaluation in ICT usage skills can be developed around the following two areas.

- Demonstration of introductory knowledge, skills and understanding of concepts related to technology.

- Demonstration of continual growth in technology, knowledge skills to stay abreast of current and emerging technologies.

### **Content and Pedagogy**

Content and pedagogy can further divided into three areas mainly to ease the development of indicators.

1. Planning and Designing Learning Environments. Teachers should be able to plan and design learning platforms that are supported by technology that include:
  - Design appropriate learning opportunities that apply technology to support diverse needs of the learners.
  - Apply current research on teaching and learning with technology when planning learning environments.
  - Identify and locate technology resources and evaluate their potential value in classroom use sustainability.
  - Plan for the management of the technology resources within the context of learning.
  - Plan strategies to manage student learning in technology enhanced context.
2. Teaching, Learning and Curriculum. Indicators in this areas can be clustered around the following areas:
  - Use technology to support learner centered strategies that address diverse needs of the student teachers.
  - Apply technology to develop student teachers higher order skills and creativity.
  - Manage student learning activities in a technology enhanced environment.
3. Assessment and Evaluation. It involves evaluating a teacher educator's competence in applying technology to a variety of effective assessment and evaluation.
  - Application of technology in assessing student teachers learning of a subject using a variety of assessment strategies.
  - Using technology resources to collect data, interpret the results, and communicate findings to improve instructional strategies.
  - Determine student teachers appropriate use of technology resources for learning, communication and productivity.
  - Evaluate the ways in which use of ICTs changes the nature of teaching and learning.

### **Collaboration and Networking**

Teacher educators use technology to enhance their productivity and professional practice.

- Use of technology to engage in on-going professional development and lifelong learning.



- Using technology to share best practice and reduce bureaucracy.
- Use technology to collaborate with peer professionals, subject forums and the larger community in order to nurture student learning.

### **Social and Emerging Issues**

Teacher educators should understand the social, ethical, legal and human issues surrounding the use of ICTs in school and colleges and apply that understanding in practice.

- Model and teach legal and ethical practice related to technology use.
- Apply technology resources to enable and empower learners with diverse backgrounds, characteristics and abilities.
- Promotion of safe and healthy use of technology resources.
- Facilitate equitable access to technology resources for all student teachers and teacher educators.

### **Mode of Computer Use**

The mode of computer use component of the proposed framework is concerned with the impact that computer use has on the curriculum.

### **Summary and Conclusion**

As technological advances continue to evolve and proliferate, teachers, teacher educators and administrators have sought to integrate technological innovations into the classroom. Teacher educators who wish to update and upgrade their teaching and learning designs using new learning technologies have some difficult issues to confront. Whether they are working in colleges, or colleges of education the incorporation of new technologies into their teaching requires them to learn about a very different approach to teaching and learning, and develop new digital materials and online activities ahead of the start of the course. This is complex design and development work that has to be done on top of the delivery of their current teaching. Some institutions recognize this and allow staff significant time to develop their ideas, skills, and designs. Very few allow adequate time. However, the expectations of teaching staff keep expanding: that they should learn to be ahead of their 'digital native' student teachers, should build 21<sup>st</sup> century skills into the curriculum even though they have not been trained themselves, and should develop wholly new ways of conducting teaching and learning. It is an impossible task, and it is time we recognize that teacher educators are deserve far more help with the development of digital learning.

This study investigated that the quantity of computer and ICT use in teacher education institutions is less and it is mainly focused on the learning of ICT skills which takes optimum time computers are used. The study concludes that the reality rhetoric gap of the impact of ICTs in teacher education institutions be evaluated from periodically to ensure that the quality with

program objectives are met. The result shows that there is an urgent need to conduct intensive training to all the teacher educators in the colleges of education. The curriculum developers should develop global content for serving the local needs and make it to available to all the colleges of education online as well as offline content or blended learning modules. Several factors have been cited as responsible for low quantity of computer use in colleges of education. Some of these factors are; attitude towards new technologies, poor management, lack of local content serving local needs, shortage of equipments, Lack of Hardware, Lack of Quality Hardware, Lack of Software, Lack of Quality Software, Lack of Training, Lack of Confidence, Lack of Knowledge, Lack of Interest, Relevancy, Technical Support, Lack of Realization of Advantages, Lack of Time, Peer Support, Lack of Administration/Organization and Power Failure. Teacher educators need to 'learn by doing', become a network, use pedagogical patterns to exchange good ideas, use OER to populate the well-designed pattern and to improve the use of ICT in teaching and learning.

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