ICT an informatics Education in Teacher's Perspectives

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ABSTRACT

We are not concerned with innovation in education merely for the sake of novelty. We are concerned with innovation as a necessary ingredient in creating and sustaining a culture of performance in public education, one that is based on the kind of continuous improvement that we believe is necessary to bring about faster and better problem solving that can, in turn, increase student achievement results. We consider a successful "innovation" to be a new approach that brings an improved result. These innovations can be small or large, mostly recognizable or entirely new and different. As innovation writer and professor Clay Christensen describes, some innovations are "disruptive" while others are considered "sustaining." Disruptive innovations are those that break with current practice to serve a new population of when most people think of innovation, they picture a new product – something like the arrival of the minivan into a world of cars and trucks. In present era ICT-based educational practices is playing an important role in molding the behavior and skills of students in all aspects of life. The present paper supports the best ICT-based practices in the field of education that further enhances student's skill of grasping the things at greater speed, making them compatible in individualized e-learning, spreading practical-based knowledge using real-live models, simulations and 3D- Visualization etc. In this fast technological generation, if we really want to cope up with the challenges in the modern life, we must aware of the existing innovative technologies and strategies for future development of the students as well as the society. This paper briefly explores the latest technologies and their role in imparting knowledge with their impact on students, teachers, administrators and other stakeholders. In this world of electronics and technology, if we want to explore our views, ideas and information throughout the country and make it globalised, we need more sophisticated and dedicated technological strategies and devices to explore them for the

contribution towards current educational system. Thus enhancing innovative educational technologies, electronics devices, tools and ICT based strategies is lucidly explained in the conceptual paper using futuristic approach.

Keywords: ICT (Information and Communication Technologies), Educational Technologies, 3-D Visualization, E-Learning, Futuristic, Electronic Devices.

I. Introduction:

The past educational practices were limited only to convergence of telecommunication, computers and microelectronics termed as "the electronic cottage", where people used to sit and work together for the development of society, service commission and utilization of leisure timings through new technologies. Latter on the emergence of internet revolutionized both the speed and nature of communication. But the current perspectives diverted more towards the rapid developments in the field technologies and innovations. These new ICT based technologies not only facilitated the internationalization of societal and economical aspects but on the other hand it has also made a drastic impact on current educational scenario.

Although, technology-mediated educational practices came into existence 150 years ago in order to replace traditional teaching-learning styles and enhances e-learning resources included online courses, various educational programmes, and classroom teaching activities through interactive devices such as e-books, e-readers, I-Pad, projectors, simulation devices, 3-D technologies, gesture-based inputs, augmented devices, virtual reality etc. These ICT devices promote interaction between the students and the teachers for conducive classroom environment and opening up of new opportunity for joint learning activities. One can deliver ICT-based learning instruction through mediated communications media to learners anywhere in the world without any time-restriction, cost, space and masses accessing the materials. ICTs are creating asynchronous learning networks which are providing distance learner not only much ricjer environment for spontaneous interaction, but the greater control over the subject-matter being studied and thus creating a new kind of learning community.

ICT is being used by many educators, educationists, administrators and various stakeholders for educational system that will be helpful for the teaching community at all levels. Today in the market, we have many hardware/software packages that are available for extra teaching-learning efficiency using available ICT resources.

II. Objectives of ICT Based Informatics Education:

1. To enhance ICT-based educational practices for various stakeholders.

2. To promote conducive learning environment for students for better teaching-learning skills.

3. To provide best educational resources for interacting classroom teaching-learning practices.

4. To understand technological teaching models and utilize technology skills effectively in the classroom teaching.

5. To analyze the complex teaching strategies into essential technology-based teaching skills.

III. ICT And Informatics Education:

Scientific and technological advancements made rapid changes in the field of education all over the world. To face this challenge, society dedicated and inspiring teachers Who can make technology for better transaction. Innovative practices and technologies are to be introduced in the field of teacher education for better educational output. Like other developed countries India also initiated learning using "EDUSAT" facilities. Online and offline support of content material encourage students to develop teacher education through self-learning process. Educational software are increasing in popularity for educators who want to share ideas or information with large or small groups of students.

ICT and Informatics Education are "Technological tools and resources that are used to communicate, to create, disseminate, store, and manage information." They "include hardware, software and Netware, as well as institutional, financial, cultural and application-related parameters that determine how ICT will shaped and developed by society at large for improving quality in teacher education." ICT has a potential to" bridge the knowledge gap" in terms of improving quality in teacher education which increases the quantity of quality educational opportunities, making knowledge building possible through borderless and boundless accessibility to resources and people; and reaching populations in remote areas to satisfy their basic right to education. As various ICTs become increasing affordable, accessible, and interactive, their role at all levels of education is likely to be all the more

significant in making educational outcomes relevant to the labor market, in revolutionizing educational content and delivery, and in fostering "information literacy".

ICT capability involves technical can cognitive proficiency to access, use, develop, create, and communicate information appropriately, using ICT tools. Along with having the potential to enhance teaching and learning in the classroom, ICTs in higher education have the potential to

- Encourage open communication between and among students, faculty, researchers, educational administrators and others that supports active learning and knowledge construction.
- Make available information and resources supporting academic research that would not be accessible otherwise.
- Foster development of learning materials, presentations, and lectures in an interactive manner that allows faculty, researchers, and educational administrators to deliver them to and share them with student directly.
- In an ICT-supported learning environment, teachers need to act as a guide to facilitate student-centered learning.
- School leaders must communicate a vision for ICT in the educational institutions and foster an ICT culture that allows all school staff to be regular users of ICT.

IV. ICT Practices in Informatics Education:

Teacher education is one of the important areas of concerns as it influences the school education directly. It has to represent the aspirations of the nation in all its aspects.

To improve the quality and access to teacher education through the use of information and Communication technologies in India: -

- Assess the current Teacher Education program in terms of its quality and accessibility of learning support.
- Develop and pilot test an appropriate ICT-based learning support system.
- Assess whether the use of ICTs improves the quality and access of learing support.
- Formulate recommendations from the research findings for a national teacher educational policy.

- Examine learning satisfaction and access to the ICT- supported teacher education from gender perspectives.

ICT practices in various fields included such as internet libraries, e-journals, e-books, educational testing services (ETS), on-line research surveys, audio-video conferencing, virtual universities, web-based learning etc. Formal and Non- Formal education, E-learning, Blended learning, Open distance education (UKOU, IGNOU) to access to remote learning resources, motivating learner, facilitate the acquisition of basic skills, enhancing Teacher training program, and to transform learning environment to learner-centered. As per our National Policy on ICT in school education, it is well accepted that the effective usage of ICT in the classroom is correlated to positive academic outcomes, including higher test scores, better achievements, and understanding of the facts, concepts and principals. In this regard, the most important technologies needs to be inculcated in the present educational system, which demands policy development, strategic implementation and planning, ICTs in teaching and learning, infrastructure and connectivity, monitoring and evaluation. At present some educational institutions focused on active learning, collaborative learning, creative learning, integrative learning, and evaluative learning.

Table No-1 ICT based informatics practices in teaching-learning system

Best ICT tools	Functions
Apple tools	iWeb, iWork.com, Mobile Me, Mac OS X and tools for building a collaborative environment to support challenges.
Wikis and other free web-based tools	Configured to work with classrooms and community groups.
Online Publication	It supports on-line educational journals via the Internet.
Professional Organization-	Professional organizations of teachers- a web presence, teacher's union's, professional associations, content area groups, technology groups, and many other have websites ranging from modest to robust in quality.
Educational Portals	Websites, which include services such as search engine, news, e-mail, conferencing, electronic shopping, and chat rooms are called portals.
Links and	Some of the best online resources are discovered through hot links

Bookmarks	from one site to another. Websites often link to other sites similar to the content of their own site. When one can find a useful website, it is a very good idea to check its link page and explain related sites. E.g. http://www.nea.org.
Classroom Management tools	Classroom management tools in the web include downloadable or online tools that assist one in the tasks required for the classroom. One creates online or paper tests and, if they are online, grade them for one and send one the result. These test generators can create tests by randomly selecting questions within their database of questions or one can select the questions to be included.
Academic tools and resources	These are the most popular tools include worksheet generators of many types that may help one to make interesting student activity sheets. These tools help one to create content specific crossword puzzles, word searches, cryptograms, mathematical exercises, and multimedia flashcards.
Web- Enhanced Instruction	Classroom website can enhance teacher- student student-teacher and student-student communication in the classroom website can contain daily, weekly, or unit assignments and complete directions on how to complete them. It can also answer anticipated student questions on a 'frequently asked questions' page. It can use web-based multimedia with voice, animation, or motion, video to present key points in formats that address multiple learning preferences.
Community Building	The technology can be used to reinforce communities of practices, especially between other learning events or after the formal training is over. Community meetings and special presentations can take place without people having to leave their home or worksites. Threaded discussions, online chats, news groups, online conferencing, instant messaging, and personal web pages are some of the techniques that make the vital online community experience work.
Online Conferencing	Synchronous technology can help facilities meetings by people who are separated by distance. The technology offers many enhancements over traditional conference calls, including the capability of

	combining voice, graphics, audio, live video, and the sharing of software applications.
Simulation technology	Give students at all levels a better biological education. It is more advanced versions of simulation software are being produced that more adequately replicate real-life scenarios for learners.
Socrative	Engaging students through educational games and exercises via smartphones, laptops, and tablets. Teachers simply choose activities for students that relate to their lessons, students interact with the content, and teachers can then measure how much students are taking away from a lesson.
Global Scholar	It is designed to help teachers meet district standards, organize records, develop lessons, and even engage in professional development.

V. Recommendations:

The situation needs to be improved. The ICT-based curriculum is to be revitalized for the sake of existence of future community. The measures are: -

- Technical and professional education institutions doing pioneering work may be treated as a model institutes.
- A Separate recommending body for ICT-based education may be established and empowered at national level.
- Upgradation of ICTs in education of course structure, examination reforms, proper use of technology and teaching audio-visual aids must be ensured.
- Concept of Experimental model with real live experiences and examples may be introduced in educational institutions.
- An online education portal with the **Centre for Development of advanced computing (C-DAC)** should be followed.
- No compromise with quality can be allowed. A separate university may be established to look after teaching and research of the institutes of teacher education.

VI. Conclusion:

With reference to the inclusion of ICT, so if we really want to bring revolution in our present educational system we must inculcate ICT-based learning in various educational institutions. This paper lucidly emphasized on the best ICT teaching-learning practices in the field of current educational system. Although, educational institutions, schools, colleges and universities having ICT –based infrastructure should make optimum utilization of the ICT and CAI based learning instructions for the development of stakeholders towards skilled-manpower. In India there is a hub of educational institutions that does not fulfill the criteria of CCE (Continuous Comprehensive Education), therefore a step must be put forward towards uplifting the present educational system.

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