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Importance of ICT in Learning

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Abstract:

 "One of the many challenges facing developing countries in 21st century, i. e. the Century of Knowledge Explosion, is that of preparing their societies for globalization & to cope up with the Information and Communication Technology(ICT) to transform present society into Knowledge Society. Our Governments, Policy-makers, Educationists, Non-Government Organizations and academia are concerned with the need to make their societies competitive due to the emergence of Information and Communication Technology. Globalization and innovations in technology have led to an increased use of ICT in all sectors including education. Uses of ICT in education are widespread and are continually growing globally. The report of the UNESCO International Symposium, 2017 on "Cracking the Code: Girls' Education in STEM (Science, Technology, Engineering, Mathematics)" emphasized the integration of ICT for teaching- learning, research and extension. The integration of ICT into classroom poses a challenge to teachers, planners, thinkers and administrators. This study aimed at finding out the factors influencing the use of ICT to make teaching- learning effective, lovable and identifying the innovations that ICT has brought into teaching-learning process. ICT can be used to support teaching and learning as well as research activities including collaborative and blended learning. ICT has introduced a new method and strategy of learning called E-learning (Electronic learning) where learners study while they are at home or work place without going to the school (Any Where, Any Time Education). This makes many workers or employees to enroll, update and upgrade themselves easily. It is believed that ICT can empower policy makers, thinkers, teachers and learners, making significant contributions to teaching and learning. The effectiveness of ICT in education has been felt that introduction of ICT adequately is highly effective in   learners' learning, performance and achievement. Studies have shown that advanced schools use ICT in teaching and learning process with intention for innovations and inventions. The use of ICT enhances skills related to teaching and learning; and enriches complete, updated and authentic knowledge. More researches need to be conducted to understand the   links between ICT and achievement, development, teaching and learning. This paper summarizes some key research findings to help educational planners to identify relevant e-Learning benefits and make judicious decisions to develop e-Learning strategies."

Education is the most important tool for development and social change. India with its ancient heritage of imparting education through Gurukul system created institutions of higher learning of national importance and international repute. In spite of this there are several crises in education system in India at its all sectors viz. Enrolment (GER), Curricula, Pedagogy, Value Inculcation, Use of Technology and ICT, Partnership (PPP), Funding, Governance, Examination, Evaluation, Assessment and Accreditation. India has quantity but lacks in quality. In present era Education includes modern Information and Communication Technology and pedagogy to incline towards ranks in examinations rather than applying the learning in day today life of individuals to utilize the knowledge for development of society and nation in true sense. Education is specifically concerned with students' development as a complete individual, the refinement of knowledge, researches and extension. The vast developments in technology, knowledge, Information and Communication Technology have created an enhanced learning environment. A teacher is expected to face the new changes to enhance quality of education by updating pedagogy and applying innovations. As knowledge societies expand, reforms in the Education programmes are important issues.   As society becomes more and more complex, the institutions are pressed to assume social obligations to train for employment, to solve social problems, to set ethical directions for society. For quality assurance, NCTE and NAAC have signed a MoU for assessment and accreditation of all Teacher Education institutions. Information and Communication Technology has become one of the basic needs for reformation and up gradation of modern society. The rapid growth in ICT has brought remarkable changes in the twenty-first century.   The integration of ICT into classrooms poses challenges to teachers in teaching and learning process; and administrators in organization and management. Teachers and administrators have strong desire for the integration of ICT into education but they encountered many barriers to it. For successful integration of ICT into teaching-learning process, the factors that positively influence teachers and administrators are their attitudes towards the usefulness of ICT in teaching-learning process. Government policies on ICT literacy, ICT competence, professional development, training, accessibility, technical support, leadership support and management are facilitating the use of ICT in all sectors and fields of education.   Studies indicate that ICT enabled learning   benefits students, teachers, societies and other stakeholders. Worldwide researches have shown that ICT can lead to improved teaching, student learning and better teaching strategies. A report made by the National Institute of

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Multimedia Education, Japan proved that an increase in student exposure to ICT has a significant and positive impact on students' achievement, especially in terms of "Knowledge", "Comprehension", "Practical Skills" and "Presentation Skills". The video and animation in education like UNICEF's animation series, "Meena" children's television show, Edutoon against gender bias and social inequity are very effective.

I. INFORMATION AND COMMUNICATION TECHNOLOGY

ICT stand for *Information and Communication Technology* and is defined as a diverse set of technological tools, techniques and resources used to create, to manage, to disseminate, to store, and to communicate information. ICT is the combination of Information Technology and Communication Technology. ICT in Education means "Teaching and Learning with ICT". In the present educational world, Information and Communication Technology has great role to play in planning for teaching and learning. ICT helps in educational planning in the following important aspects:

(a) It provides the ways to decide learning goals for students to develop desired competencies.

(b) It provides support in educational administration.

(c) It provides resources for educational planning.

(d) It provides the criteria how to plan for examination, evaluation and assessment.

(e) It provides tools to improve students' abilities to learn through multimedia approaches.

(f) It provides support in educational management.

(g) It provides some software and applications that encourage reflections in learning.

(h) It provides support to plan for innovations.

(i) It provides models of good teaching.

(j) It provides support in learning management.

(k) ICT supports in research and extension.

(l) ICT supports to plan for quality management and assurance.

(m)ICT led to easy and quick access to worldwide knowledge through internet.

(n) ICT supports to plan for online platform in all sectors.

II. AIMS OF ICT

The report of the International Symposium and Round Table, UNESCO, 1989 on "Qualities Required of Education Today to Meet Foreseeable Demands in the Twenty-first Century" emphasized the integration of ICT for teaching- learning, research and extension. UNESCO aims to ensure access to the best educational facilities to contribute to National Knowledge Network (NKN) to achieve the goals of Education for All (EFA) which are possible due to ICT. The aims of ICT implementation in education are as follows:

1) To implement the principle of life-long learning.

2) To increase online learning or e-learning.

3) To increase a variety of educational methods i.e. Multimedia Approaches.

4) To provide blended platform.

5) To promote Equal Educational Opportunities to all.

6) To promote Collaborative learning.

7) To develop a system of collecting and disseminating information.

8) To promote ICT Literacy to all, Educational Technology For All (ETFA).

9) To develop Open and Distance Education.

10) To promote the culture of self learning.

11) To promote value education.

12) To implement e-governance.

III. ADVANTAGES OF ICT FOR EDUCATION

The following are main advantages of ICT in education:

(a) Images with animation can easily be used in teaching to improve the interest and retention of the students.

(b) Increases learner motivation and engagement

(c) Teachers can easily explain complex contents and ensure students' comprehension and learning.

(d) Facilitates the acquisition of skills for teaching and learning.

(e) Teachers are able to create interactive and interesting classes for Joyful Learning.

(f) Teachers can make the teaching and learning more enjoyable (Joyful Learning) to improve students' attention and concentration.

(g) Teachers can provide the students the blended platform for the learning.

(h) Teachers enhance their professional competencies.

(i) Students can manage learning by their own (Self Learning) to achieve the goal of "Education For All".

(j) Students can manage Personalized Learning.

(k) Students can manage Collaborative Learning to develop learning abilities and competencies like: Critical Thinking, ICT Competencies, Team Spirit and Communication Skills.

(l) Students can manage their study through Open and Distance Learning (ODL) mode.

(m)Students can contribute to the Knowledge Network.

(n) Students can learn on e-learning platform.

(m)Teachers and students can have access to the best educational facilities.

IV. INTERNET

The Internet is a telecommunicational global computer network providing a variety of information and communication facilities using standardized protocols and telephones, cables, satellites and wireless connections etc. The internet has enabled new forms of social interaction and activities. Educational material at all levels from pre- school

to post- doctoral is available on it. The internet provides access to huge library of information from the millions of websites around the world that forms World Wide Web. Internet is the main tool of ICT. It uses computers and World Wide Web (www). Internet is a driving force for development and innovation. Internet may be described as:

INTERNET = INNOVATION + INVENTION + INTENTION

Internet is responsible for ICT Literacy. Teachers and students should develop ICT Literacy i.e. how to use ICT. ICT infuses all the aspects of education in such a way as to improve students' learning and its management. Education drives the economic and social development in any country which serves as repository of knowledge. As far as the 21st Century Teachers and learners are concerned, their transformed roles are clear from the cliché: "The teacher is no longer the sage on the stage, but the guide on the side". The teacher is becoming less central to the learning process than the student. ICT has changed the way businesses and industries are influenced the way people work, interact and function in the society.

V. TRASFORMING EDUCATION THROUGH ICT

Education is the main foundation of a thriving and innovative knowledge society. India needs to develop strong and appropriate human capital to stay in the forefront of competitive world. This will be achieved by the quality of education delivered, by upgrading Educational programmes, quality of professionally skilled and knowledgeable teachers, the curriculum, the curriculum transaction, infrastructure facilities and pedagogy. Hargreaves and Fullan believe, "The teacher is the ultimate human resource to educational changes according to the needs of the societal changes and advancements. Blended learning strategy using Information and Communication Technology (ICT) should be applied by the teachers. ICT emphasizes changes from Teacher- Centred to Learner- Centred Learning (TCL to LCL). The pedagogy requires shift from the conventional pedagogy based on the Banking Model of Education where students are considered as empty vessels into which knowledge must be poured in to 'Pedagogy with ICT' with a focus on holistic approach.

Necessity of professional development of teachers for quality education is being felt all over the world. Kothari commission Report (1964-66) criticized the existing Teacher Education Programme being away from reality. Hence, a systematic analysis of the recent reforms in professional development of teachers and the need of paradigm shift in Teacher Education in our country is essential. ICT helps in Policy making and Decision making. It supports Curriculum development and Assessment. ICT plays important role in research and extension. It enhances professionalism and helps in professional development. ICT has also made communication easy through the internet e.g. E-mail, chatting, teleconferencing, video-conferencing, whatsapp, twitter, facebook etc. ICT led to easy and quick access to worldwide knowledge through internet. ICT exposes learners, teachers and administrators to modern world through searching, reading and connecting, browsing and surfing with resources throughout the world. ICT has

improved the quality of educational work since most of the teachers and administrators use software to do most of their work using ICT. ICT has made it easy for the teachers to update teaching-learning pedagogy by learning more about the latest techniques and strategies. ICT has made it possible for administrators and teachers to register the students online and for students to access their records. ICT made it easy for the administrators to advertise electronically the institution so that individuals can know about the institution, the courses and vacant positions on their websites. The use of ICT in education has resulted in a move from teacher-centred delivery to student-centred learning to acquire core intellectual abilities, such as communication, interpretation and reflection by learners. ICT functions as information resources and cognitive tools, supporting and enabling students to be responsible for their own learning. Traditionally, students have to complete their studies within a specified and constrained time-frame and the physical settings of their institutions. Now ICT enabled learners has to take part in learning activities without time constraints increasing the opportunities for more students to participate in learning according to their pace and feasibility. That is to say that the learners learn without any barrier or burden. Now the education is at their door steps. Teachers now have different responsibilities and also require new skills with high levels of ICT, and need to be facilitative rather than didactic in teaching. ICT-based learning provides economies and efficiencies resulting in reductions in the costs. ICT helps to make curricula Industry-oriented, Skill-based, Multidisciplinary to get holistic exposure which may promote continuing education & entrepreneurship.

VI. CONCLUSION

Education is the driving force for the development in all sectors. Therefore, it is necessary to integrate ICT in education to ensure quality, accessibility, affordability and value based education. Improving the quality of education is a critical issue. ICT is a transformational tool for quality, accessibility, affordability and value based education which when used appropriately, can promote the shift to a learner-centered environment at all the levels of ICT use in education identified by Haddad and Draxler, viz: Presentation, Demonstration, Interaction, Collaboration and Practice. ICT can be pivotal in tackling the impacts of liberalization, privatization, globalization (LPG), mass enrolment, diversification, and commercialization in higher education. The use of ICT makes education more affordable and accessible, increases gross enrolment ratio, enhances students' mobility, influences teaching and learning, develops higher order thinking skills and collaborative skills, provides flexibility, creates competition to improve quality and value based education. Educational institutions should use ICT to develop course materials, deliver and share course content, lectures and presentations, facilitate communication, encourage pedagogical innovations, increase cooperation and collaboration, conduct research, enhance professional development, and provide administrative, management and extension services. ICT can provide access to education regardless of time and demographic barriers. ICT can influence the way how students are taught. It would enable development of

collaborative skills and knowledge exploration skills. Students should learn the access of knowledge through Massive Open Online Courses (MOOCS) and intensive use of technology.

We need quality education which depends on the quality of teaching and learning. Improvement in teaching quality is one of the most important issues in all disciplines of the studies. For this learned, skilled, dedicated, oriented, self-motivated, ICT literate and committed teachers are needed who would be able to transform the classroom into a wonder-room (wonderful place for learning). Quality is never an accident, it is to be practiced. Teachers, policy makers, Universities and the Governments would take active steps for enhancing quality in teaching. Paradigm shift is required from traditional teaching to collaborative and blended learning using ET and ICT. ICT has brought about tremendous change in education, but we are yet to achieve the desired IT adoption in all sectors of education in the country. Governments, planners, educationists, thinkers, administrators, parents and teachers have to rethink that which type of education they want their future generation to learn? Collaborative efforts of parents, teachers, society, media and ICT can bring the Indian youth on right track to live a disciplined life in this Knowledge Society to face Knowledge Explosion. We have to build a 21st century model for education that is of high quality, equitable, accessible and affordable that makes India a role model for a education system that is not just the best in the world but the best for the world. This is the right time to act and reform. Efforts are to be made by all stakeholders involved i.e. Academia, Students, Parents, Society, Industry, PPP, FDI and Government. Collaborative efforts of governments, parents, teachers, society and ICT can bring the Indian youth on right track to live a disciplined life with happiness and harmony.

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