CURRENT TRENDS AND ISSUES OF ICT IN EDUCATION

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ABSTRACT

Information and communications technology (ICT) refers to all the technology used to handle telecommunications, broadcast media, intelligent building management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions. Although ICT is often considered an extended synonym for information technology (IT), its scope is broader.

ICT has more recently been used to describe the convergence of several technologies and the use of common transmission lines carrying very diverse data and communication types and formats.

Keywords: Digital Education, ICT in education, information and communication technology

I. INTRODUCTION

The ICT program was established to provide students with the knowledge and skills needed to understand the theoretical and applied uses of information technology in various business applications. The program prepares students to enter the information and communication technology (ICT) workforce as computer system support analysts (technical or applications), network administrators, or database administrators.

Schooling and teaching is changing with this new context. For example, students and teachers should have technological skills because they use them in their classroom and in their curricula. ICT have some characteristics that make them an essential tool in our daily life and for instance in our schools. Also, it is very important to know that ICT are not only about computers and the internet, but also about a big amount of different tools such as mobile phone, tablets, etc. New Technologies have changed the way we communicate and the way we live and work. For this reason ICT in Education is an approach that makes the school and the society closer. In this article we will focus on the role and different kinds of ICT in education and in the main characteristic that nowadays technologies have.

II. WHAT HAS PROMISED ABOUT EDUCATION?

- **Mobile learning's moment has arrived**

Five years ago we were talking about SMS and very limited Smartphone pilots. SMS is limited as a learning device given its inherent constraints, but the explosion of Smartphone ownership everywhere means that applications are now a legitimate tool for delivering educational content – and content that can be interactive and responsive. The path to scale now exists. People are already using smart phones to learn, even in ways they aren't aware – the development field's job now is to harness this tool for systematic educational initiatives.

- **Easy online environments provide new potential for communities of practice to gather and learn from each other.**

  Educators and other educational professionals who may have been previously isolated from each other can now much more easily and conveniently connect and exchange knowledge. This facilitates the dissemination of new ideas and tightens professional networks, making them more useful and rewarding to participants.

- **Blended learning is becoming a reality**.

  The ability for instructors to usefully integrate technology tools into lessons shows us that there isn't really a choice to be made between good teachers and useful technology. Effective pedagogy makes use of both. One participant shared an example of how a trainer asked students to use their smart phones to fill out a short online poll, and then used the real-time results to direct class discussion.

- **Adaptive technology gets students content that responds to their skills and pace.**

   More effort and investment in bringing adaptive learning systems to developing countries will result in relevant educational content that can scale fast. Some examples of tools that already exist are DuoLingo, for learning languages and Adapted Mind, for learning math and reading (in English).

- **Simulations.**

  "The best way to learn is to actively solve problems." We heard about research and experimentation into digital simulations that allow medical students to practice surgery in a safe environment – especially practicing rare cases that they might not have the chance to encounter during schooling otherwise.

III. 10 KEY TRENDS

- **PERSONAL COMPUTING:**

  The trend in classrooms around the world is to provide an information device to every student and create learning environments that assume universal access to the technology. Classrooms in India too should prepare for the universal availability of personal learning devices, be it a personal computer (PC), laptop, or Smartphone.

- **BETTER CONTENT CREATION:**

  The PC is a better enabler of good, solid content creation in terms of projects and assignments (designing, graphics and animation) as against other portable devices.

- **ANYTIME, ANYWHERE:**

  All around the world, school systems are trying to provide students an opportunity to learn anytime, anywhere. This is owing to the increase in connectivity infrastructure and cheap and easily available portable devices. This trend requires a rethinking of traditional classes. Apart from hardware and Internet access, it requires the virtual presence of teachers, and/or opportunities for student-to-student learning and learning at one's own pace.

Smartphones are also contributing to this end. With their ability to multitask and serve as handy means of information, it is very likely that these devices will enable anytime, anywhere learning.

- **LEARNING MADE PERSONAL**

  Education systems are increasingly investigating the use of technology to better understand a student's knowledge base. After this, lesson plans are customised to address learning gaps as well as learning styles.

- **CLOUD COMPUTING**

  Applications are making their way off a device and on to a server that can be accessed from anywhere using the Internet. The implications of this trend for education systems are big; they will make cheaper information appliances available that do not require the processing power or size of the desktop. The challenge will be providing the connectivity to access information while on a cloud.

- **GAME ON**

  Games are a tried and tested method to garner attention and interest. Technology-enabled interactive games with a focus on active participation, built-in incentives and interaction aim at stimulating the learner.

- **TEACHER-GENERATED CONTENT**

  Teachers are constantly encouraged to both identify and create the learning resources that they find most effective in the classroom. Many online texts allow teachers to customise material for students.

- **SMART PORTFOLIO ASSESSMENT**

  The collection, management, sorting, and retrieving of learning-related data will help teachers better understand learning gaps and customise approaches. Tools are increasingly available for students to gather their work together in an online portfolio. Whenever they make an addition to any online service, it will appear in their personal portfolio, which can be both peer and teacher assessed.

- **TEACHER'S ROLE**

  The teacher's role is no longer just about being in the forefront of knowledge but, rather that of an instructional manager, who guides students through individualised learning pathways, identifying relevant learning resources, creating collaborative learning opportunities, and providing insight and support, both within the classroom and outside.

- **LEARNING SPACES**

  Schools, now, are also paying attention to the learning environment in order to foster collaborative, cross-disciplinary, student-centred learning. Concepts such as better use of light, colours, and individual spaces for students and teachers are increasingly emphasised.

Issues of ICT in Education:

- **Impact on learning and achievement:**

  It is generally believed that ICTs can empower teachers and learners, making significant contributions to learning and achievement. However, current research on the impacts of ICTs on student achievement yields few conclusive statements, pro or con, about the use of ICTs in education. Studies have shown that even in the most

advanced schools in industrialized countries, ICTs are generally not considered central to the teaching and learning process. Moreover, there appears to be a mismatch between methods used to measure effects and the type of learning promoted. Standardized testing, for example, tends to measure the results of traditional teaching practices, rather than new knowledge and skills related to the use of ICTs. It is clear that more research needs to be conducted to understand the complex links between ICTs, learning, and achievement.

- **Monitoring and evaluation:**

  Many of the issues and challenges associated with ICTs in education initiatives are known by policymakers, donor staff, and educators. However, data on the nature and complexity of these issues remains limited because of the lack of good monitoring and evaluation tools and processes. Where evaluation data is available much of the work is seen to suffer from important biases. Another problem in this area is the lack of a common set of indicators for ICTs in education. And, where data has been collected, it is often quantitative data related to infrastructure (number of computers, for example) rather than data that can help policymakers gauge the impact of ICT interventions on student learning.

  If ICTs are to become effective and integral tools in education, and if accountability is to be demonstrated to donors and stakeholders, monitoring and evaluation must be a priority area of focus.

- **Costs:**

  Little is known about the true costs of ICTs in education. There have been few rigorous costs studies, particularly in developing countries. Given current budgetary and resource constraints, a widespread investment in ICTs in education is probably not possible in most developing countries. It is, therefore, critically important to better understand the costs and benefits associated with ICT types and uses in various educational situations in order to effectively target scarce resources. There is some evidence, for instance, that computers may be most cost-effective when placed in common areas such as libraries and teacher-training institutes.

  Distance education is often cited as a cost-saving investment. Indeed, economics of scale are achievable in distance education, although such programs typically require large up-front investments. Some of these costs may be shifted from the public sector to the individual users, but this in itself raises significant equity and access issues. Again, a thorough examination of the true costs and benefits of distance education is required.

- **ICT projects and practices**

  Globalization and innovations in technology have led to an increased used of ICTs in all sectors - and education is no exception. Uses of ICTs in education are widespread and are continually growing worldwide.

  In large scale, donor-supported projects that utilize ICTs to benefit education, the ICT components typically assist in

- Supplying computers and connectivity and building school computer labs

- Enabling instruction in computer programming and computer literacy,

- Developing and disseminating new curricula in electronic format

- Distance learning, and

- Enabling better administration in the education sector, particularly through the development of education management information systems.

Where ICTs are used for learning, evidence suggests that they are chiefly used to present and disseminate information, as tools for presentation rather than the often cited promotion of "21st century skills." It is clear that much more information is needed on the ICT components of donor-supported projects, including how ICTs are actually being used to support educational objectives. In addition, this information needs to be better incorporated into the planning and delivery of new ICT projects.

- **Teachers and Teaching:**

The use of ICTs in the classroom or in distance education does not diminish the role of the teacher; neither does it automatically change teaching practices. Experience has shown that a variety of support and enabling mechanisms must be implemented to optimize teacher use of ICTs. While traditional teacher leadership skills and practices are still important, teachers must also have access to relevant, timely, and on-going professional development. They must have the time and resources to explore this new knowledge base and develop new skills.

Support of school administrators and, in some cases, the community, is critical if ICTs are to be used effectively. In addition, teachers must have adequate access to functioning computers (or other technologies) and sufficient technical support. Shifting pedagogies, redesigning curriculum and assessment tools, and providing more autonomy to local schools all contribute to the optimal use of ICTs in education.

IV. CONCLUSION

In conclusion, there is a need to create world-class content mapped to student learning across categories and made available to every student at the click of a button. Interactive learning systems, content ecosystem, proliferation of different access devices and evolving telecom infrastructure will ensure learning and skill development in tune with the demands of today's world. These initiatives can potentially bridge the knowledge gap in students, capability gap in teaching, and overcome the issue of scalability in education.

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