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Role of Media and Technology in the Digital Era of 21st Century Education

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Abstract

The world is changing very rapidly. Digital media technology has innovative web-based services. Our global future is developing through communication, collaboration, and innovation- all of which are dependent on technology. The Internet is now a global marketplace, a global workspace, and a global meeting place that provides a vast array of opportunities to not only learn about the world but interact with the world. Digital media in a global era offers more than using technology to do the things that were done by hand before- such as data or word processing, retrieving information, presenting knowledge, and one-to-one communication- it now allows easy participation in the sophisticated global experiences and networks that our wired world affords. Much has been learned in the past about the potential of a technology-rich approach to education. This paper reviews the generations of learners that teachers are having today and how these generations impacted the transformation of education in the digital era. This paper also presents some of the emerging technologies and discusses the need for pedagogical transformation to invent new forms of teaching and learning as well as the importance of redesigning and rethinking education in the digital era.

Key Words- Digital media, technology, Education, Global Future, Opportunities

INTRODUCTION

One of the most important aspects of technology in education is its ability to level the field of opportunity for students. John King, U.S. Secretary of Education

Technology can be a powerful tool for transforming learning. It can help affirm and advance relationships between educators and students, reinvent our approaches to learning and collaboration, shrink long-standing equity and accessibility gaps, and adapt learning experiences to meet the needs of all learners. Teachers' role in the 21st century has become more complex in the present changing world where knowledge is almost unlimited. Teachers are expected to become technologically oriented and responsible not only for their teaching but also for their students' learning. Today teachers are required to be facilitators helping learners to make judgments about the quality and validity of new sources and knowledge, be open-minded and critical independent professionals, be active co-operators, collaborators, and mediators between learners and what they need to know, and providers to

scaffold understanding. In this digital era, teachers' role has shifted from mere to the manager of student's social and emotional behaviors'; a mentor for their learning and overall development as balanced citizens; motivators for slow learners and fast learners in the digital environment. He/she has to address social and emotional issues that affect learners' learning and be ready to make changes when their learning stalls. One of the most important aspects of technology in education is its ability to level the field of opportunity for students. Education Technology can be a powerful tool for transforming learning. It can help affirm and advance relationships between educators and students, reinvent our approaches to learning and collaboration, shrink long-standing equity and accessibility gaps, and adapt learning experiences to meet the needs of all learners. Educators should be collaborators in learning, seeking new knowledge, and constantly acquiring new skills alongside their students. Education leaders should set a vision for creating learning experiences that provide the right tools and support for all learners to thrive. To realize fully the benefits of technology in our education system and provide authentic learning experiences, educators need to use technology effectively in their practice. Furthermore, education stakeholders should commit to working together to use technology to improve American education. These stakeholders include leaders; teachers, faculty, and other educators; researchers; policymakers; funders; technology developers; community members and organizations; and learners and their families.

DIGITAL TECHNOLOGY: A 21ST CENTURY EDUCATION

Digital integration is also fundamental to a thoroughly 21st-century education; it is not enough to simply add technology to existing teaching methods. Technology must be used strategically to benefit students. Students are increasingly advanced users of technology even as they enter school for the first time, so this can often mean being open to the possibilities presented rather than attempting to teach and prescribe the use of certain programs. Many a classroom ‘technology class’ has baffled children by attempting to teach them about programs, websites, and hardware that are no longer relevant or that they understand far better than the teacher does.

A 21st-century education is about giving students the skills they need to succeed in this new world and helping them grow the confidence to practice those skills. With so much information readily available to them, 21st-century skills focus more on making sense of that information, sharing and using it in smart ways. The ways are Creativity, Critical thinking, Communication, and Collaboration. Creativity is about thinking through information in new ways, making new connections, and coming up with innovative solutions to problems. Critical thinking is about analyzing information and critiquing claims. Communication understands things well enough to share them clearly with other people. Collaboration is about teamwork and the collective genius of a group that is more than the sum of its parts. Education needs to be all about empowering students with transferable skills that will hold up to a rapidly changing world, not prescribed content that has been chosen for its past relevance.

OBJECTIVES OF THIS STUDY

• Identify evidence of how digital learning and teaching support improved outcomes for learners and teachers.

• Identify the conditions that lead to the successful implementation of digital learning and teaching.

• Identify the impacts that digital technology has on learning and teaching.

• Identify how digital technology can support and contribute to educational priorities.

METHODOLOGY

This present study is based on secondary sources like books, Articles, Journals, theses, University News, Expert opinions and websites, etc. The method used is the Descriptive Analytic method.

NEED AND SIGNIFICANCE OF THE STUDY

The scenario of the classroom is changing. There is a technological gap between the progress of society and the instructional activities of the teacher in the classroom. If we see our society on the one hand technology has revolutionized our society and on the other hand, the teaching-learning activities at the school level have remained so far away from technology. In our classroom, the knowledge is anciently imparted by the teacher, a teacher-centric model which is most of the time boring and does not gain interest to the student. But present 21st-century education is student-centric education. Students learn from multi-sources and for this reason, the use of media and technology in the digital era of 21st-century education is very much essential in the educational field also teachers' knowledge of ICT and Multimedia is required. So this study shows great need and significance because this study shows the role of media and technology in the digital era of 21st-century education.

REVIEW OF LITERATURE

TECHNOLOGY IN EDUCATION TIMELINE

The timeline regarding the use of technology in education reveals that different technologies have always been used to increase the effectiveness of learning and teaching. The tools, techniques, and supplies used in education are naturally affected by technological advancements. As stated by Alkan (1996), it is necessary to know the effects of industrial, social, cultural, political, economic, and demographic factors that affect education processes to make realistic diagnoses and take the necessary measures. Early technology uses in education commenced with one-way correspondence education through different uses of postal communications, radio, and television programs between 1840 and 1850.

In the Education 1.0 period, web tools were used just to provide one-way information. It was not possible to make any corrections or additions by third parties to the content provided. Since there was no direct interaction in this process, the learners' roles were passive (Semerci, Yavuz & Semerci, 2018). In the Education 1.0 period, predominantly traditional teaching approaches were adopted, the teacher became a mere information transmitter, while the students were consumers of knowledge. With the introduction of Web 2.0 technology in 2004, the

Education 2.0 period has begun. This era brought some profound changes in students' and teachers' roles. In addition, digital learning platforms brought substantial changes to education. In 2010, social and virtual learning environments and mass learning applications came to the forefront and this era has been called Education 3.0. Unlike traditional learning methods, learner practices have been used widely. In line with the emergence of Industry 4.0, a new period called Education 4.0 was started concurrently. According to Öztemel (2018), Education 4.0 refers to a period in which digital transformation and innovation started to dominate in education as in many other fields.

TECHNOLOGY TRENDS AND EDUCATION 4.0

Technology trends indicate that the future will be characterized by smart devices called smart digital networks. Gartner defines the people, devices, content, and services spiral as an 'intelligent digital network' and considers the 'Smart,' 'Digital' and 'Network' trio as key components that will shape the future (Panetta, 2018). Some of these technologies that bring massive changes in every aspect of life from production to working life, from learning to social development are listed below (Baheti & Gill, 2011; Brown, 2015; Bulut and Akçacı, 2017; Panetta, 2018).

The closed relationship between the industrial and educational periods leads to the emergence of new professions that require some specific skills. For instance, cyber security specialists, machine learning specialists, information systems administrators, application developers, cloud computing managers, IoT architects, blockchain engineers, artificial intelligence specialists, data analysts, health practitioners, and instructional designers are among these leading light occupations. Bearing this fact in mind, educational institutions should inevitably be structured to meet the demands of highly qualified manpower in this dynamic transformation process (Akkoyunlu, 2018; Lizut, Marzano & Grewinski, 2018). Even though technology constitutes the driving force of industrial revolutions, the focus of all revolution periods including Industry 4.0 is human. Therefore, education has two main responsibilities in this change process. First, educational institutions have the responsibility to train individuals capable of adapting and using new developments and meeting the expectations of contemporary society. Second, they have to train highly qualified individuals to meet the requirements of the technology-intensive labor market. Our current education system is convenient to train individuals with the skills and the qualifications required by the new industrial revolution process.

Education 4.0, as a sub-step of Society 5 is represented by different paradigms such as sense-making, growth mindset, creative thinking, STEAM (Science, Technology, Engineering, Art, and Math) learning, classroom in the clouds, coding, flipped learning, and make learning (Semerci, 2018). Therefore, the development effort toward Industry 4.0 requires the updating of infrastructure, technology, teacher competencies, and programs to take advantage of the full potential of smart products, services, and business opportunities in the future. In the following section selected technology trends and their reflections on education were examined. Implementation of

educational media technology helps in supporting education-related apps and social media. It enables easy learning by providing access to mobile devices, which helps students meet defined standards as well as challenges.

ACHIEVING EDUCATIONAL TRANSFORMATION

Using the parlance of educational technology, Education 1.0 represents education as it was practiced during most of the 20th century: problematic access, uneven quality, variable practices and standards, and limited performance management. Beginning in the early 1990s, educators initiated the Education 2.0 phase by crafting policies aimed at professionalizing processes, setting standards, and upgrading capabilities. Still, the emphasis of Education 2.0 has been on reforming the existing paradigms rather than transforming them. What we now see on the horizon is Education 3.0, a new phase in which educators will develop and implement a transformative template for 21st-century learning. Education 3.0 builds on the Education 2.0 reforms but adds the power of cutting-edge communications, the latest pedagogical tools, and collaboration technologies to equip learners for work and life in the present age. This paradigm shift has four key aspects: teach 21st-century skills, employ 21st-century pedagogy, integrate 21st-century technology, and lead with a 21st-century-style vision.

TECHNOLOGY IS A KNOWLEDGE ENABLER.

The same technologies that created the Internet and the information revolution have the power to transform education as well. Information technology has the proven potential to deliver better instructional materials to the classroom, better training and support to the instructors, and better collaborative and personalized resources to students. To adequately prepare students for the future, learning environments must give them the digital tools required to find, select, structure, and evaluate the mass of information that already permeates 21st-century business and social life.

Technology has been playing a role in education for some time. However, most institutions have not yet taken full advantage of the benefits offered by intelligent, multimedia-capable networks and collaboration technologies. Three significant barriers must be overcome before this technology can help transform learning and meet ambitious objectives: broadband access must be extended to those areas where it is currently unavailable or unaffordable; professional development needs to include training in the new techniques and resources, and the right technology has to be provided at the right time to bring new educational techniques and policies into alignment with current student populations.

CONCLUSION

The new paradigm for 21st-century education will require a holistic transformation of learning systems, guided by a comprehensive roadmap that covers curricular and assessment reform, new teacher recruitment and training strategies, leadership development, and the integration of collaborative technologies. This transformation will be facilitated by exceptional teachers and supported by technologies that empower individuals to create, adapt, and share content. Although this vision is global, the path requires a local journey, one that recognizes and responds to opportunities and challenges at the community level. The ultimate goal: a systematic restructuring that results in a quantum improvement in both the quality and accessibility of education worldwide.

Teaching occupies an honorable position in society. Media and technology in the digital era of 21st-century education help the teacher to update the new knowledge, and skills to use the new digital tools and resources. By using and acquiring the knowledge of technology, the teacher will become an effective teacher. Media and technology are one of the major factors for producing the rapid changes in our society. It can change the nature of education and the roles of students and teachers in the teaching-learning process. Teachers in India now started using technology in the classroom. Laptops, LCD projectors, Desktop, EDUCOM, Smart classes, and Memory sticks are becoming the common media for teacher education institutions. So we should use information & communication Technology in Teacher Education in the 21st Century because now teachers only can create a bright future for students.

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