Digital Education Matthew N. O. Sadiku¹, Adebowale E. Shadare², Sarhan M. Musa³

^{1,2}Department of Electrical & Computer Engineering, Prairie View A&M University, Prairie View, TX 77446, USA ³Department of Engineering Technology, Prairie View A&M University, Prairie View, TX 77446, USA

Abstract— Digital education is the process of using digital technology in teaching and learning.

Teachers are under pressure to use digital technologies in teaching students and prepare them for work in a globalized digital economy. Digital education prepares students for becoming digital citizens by making them acquire skills for navigating and existing in the digital world. This paper provides a brief introduction to digital education.

Keywords—digital education, digital learning, computerized education, online learning.

INTRODUCTION

I.

Digital technologies are playing crucial role in the administration of education. The work of policymakers, educators, parents, and learners are all being governed by digital technologies. For example, the Internet is providing an easy access to unlimited amount of information. It allows students and teachers to learn different ways of learning.

Digital technologies (phone, computer, table, e-book, social networking, online videos, mobile devices, etc.) offer great hope for both learners and teachers today. The use of digital technologies to improve learning keeps climbing. The number of digital devices in K-12 classrooms continues to increase. Some school systems have so embraced technology that they provide every student with a laptop computer since they believe that computers will improve student learning. This has significantly raised standardized-test scores. It has also prepared the students for technology-heavy workplaces.

Digital education is training that applies digital technologies and their application in various areas of human activity. It helps to develop students' digital literacy and prepare them for the global, digital labor market and social life [1]. Our publics in digital education include students, educators, parents, administrators, policy-makers, and commercial interests. Digital education, like any other form of education, can be done well or poorly. Computer-based learning requires well trained teachers to make it effective.

It has been argued for decades that computer games and other digital devices like web comics can help students become effective learners. Games are useful in motivating and engaging students. They are visual, intermediary, and popular. Game-based learning as a digital technology will gain widespread usage. Such a game is created to teach a subject in **www.ijaems.com**

a form of software than runs on a computer, laptop, or game console [2]. Digital or web comic is a powerful innovative, instructional medium. It describes a comic book designed to be viewed on the Internet. Students concentrate their effort in comic creation and are asked to become authors of their own digital comic in the classroom. Comics have gained popularity in elementary, high school, college, and adult education [3].

II. DIGITAL EDUCATION RESOURCES

Digital education resources consist of multimedia materials existing on a web page in a computer network. They interactively stimulate students to learn. Typical digital education resources include emails, digital audio, multimedia software, and online learning management system. The goal is to realize effective sharing of teaching resources. These resources can be integrated through the cloud technology. This will offer learner high-quality learning experience [4]. One benefit of having repositories of digital educational resources is the potential reuse of those resources. Authors can share, reuse, adapt, and improve.

III. CHALLENGES

Although digital education has imparted all levels of education, some challenges remain unresolved. First, it takes more time for a professor to prepare and teach online courses than the regular, traditional face-to-face courses. Long after he goes to bed, students send emails and post messages. Second, the majority of faculty members are apprehensive of new technologies. They are not motivated to attend educational technology conferences or read books dealing with creative applications of digital technologies. Third, assessment, the activity of measuring learning, is a major problem in digital education. Course developers often use the simple multiplechoice items in their exams. This is quite inadequate for future leaders, managers, engineers, and scientists. Fourth, there is the problem with accreditation. There has been a proliferation of colleges and universities offering online programs. Some of these are unwilling to obtain accreditation for their programs. Accreditation agencies never deal with the issues of quality. These are challenges that online educators must not ignore [5].

IV. CONCLUSION

Digital technologies are increasingly becoming parts of education at all levels. Online K-12 schools are spreading across the United States. Schooling that combines computerized learning seems to be the emerging model. It is believed that digital revolution will change the way students learn. Digital education has tended to produce nomadic digital citizens who practice some kind of utopian politics. The key priorities in digital education should be developing online undergraduate and graduate courses [6].

REFERENCES

- [1] I. Jellnek, "Digital education strategy for the Czech Republic," *IT Pro*, September/October 2015, pp. 8-11.
- [2] S. Aslan and O. Balci, "GAMED: digital educational game development methodology," *Simulation: Transactions of the Society for Modeling and Simulation International*, vol. 91, no. 4, 2015, pp. 307-319.
- [3] M. Vassilikopoulou et al., "Plot use of digital education comics in language teaching," *Educational Media International*, vol. 48, no. 2, 2011, pp. 115-126.
- [4] Q. Jiang and X. Xu, "Strategy of digital education resources construction in cloud-computing environment," *Proceedings of Eighth International Conference on Measuring Technology and Mechatronics Automation*, 2016, pp. 632-635.
- [5] T. C. Reeves, "Storms clouds on digital education horizon," *Journal of Computing in Higher Education*, vol. 15, no. 1, Fall 2003, pp. 3-26.
- [6] A. Emejulu and C. McGregor, "Towards a radical citizenship in digital education," *Critical Studies in Education*, 2016, pp. 1-17.

ABOUT THE AUTHORS

Matthew N.O. Sadiku (sadiku@ieee.org) is a professor at Prairie View A&M University, Texas. He is the author of several books and papers. He is a fellow of IEEE.

Adebowale Shadare (shadareadebowale@yahoo.com) is a doctoral student at Prairie View A&M University, Texas. He is the author of several papers.

Sarhan M. Musa (smmusa@pvamu.edu) is a professor in the Department of Engineering Technology at Prairie View A&M University, Texas. He has been the director of Prairie View Networking Academy, Texas, since 2004. He is an LTD Spring and Boeing Welliver Fellow.