Tools and Techniques of Digital Education

Gautam Srivastava

https://orcid.org/0000-0002-8614-6718

G. L. Bajaj Institute of Technology and Management, India

Surajit Bag

https://orcid.org/0000-0002-2344-9551

Institute of Management Technology, Ghaziabad, India

INTRODUCTION

Education is one of the basic needs of the people and the digitalization in education is a necessity and also a current trend which is shaping the learning of the students and making them more focused on learning. Digitalization in education can be understood as the utilization of various modes like desktop, mobile, software applications and various other digital education tools for delivering education. Digitalization has transformed the education system in the present scenario (Starkey, 2011). Over the past few years digitalization has penetrated the education sector. A significant change has been observed in the teaching and learning process throughout the globe. Digitalization is revolutionizing education (Williamson, 2016). It is important to transform the education system as it is the backbone of any country. Modern education boosts the economy of the country which in turn helps the people of the country to grow, develop and have a high standard of living. This whole process requires the up gradation of the education system through digitalized tools (Edwards, 2015). The traditional education system has limited resources which has put limitations. In the pre- digitalized era classroom, libraries etc. were the only tools to teach the students but now apart from these tools, there are multiple digitalized tools which impart education even in remote areas. Digitalization in education helps the students to gain knowledge easily and also in a different way than it was before. Digitalization also saves a lot of time for the learners and hence they can focus on other things at the same time. Digitalization has changed the traditional way of learning (Loveless, 2011). People were dependent on textbooks and lecture notes before digitalization stepped into the education system (Dillenbourg, 2016). But the whole learning system has been upgraded as now the students can easily find all the textbooks and the study material on the internet and also it is readily available which was limited to classroom education before. The entire world is moving towards a knowledge society (Kyaw et al., 2019). In today's modern world, education is given the highest priority in society. Digitalization has opened multiple avenues in the teaching and learning process (Pozzi et al., 2020).

Due to digitalized tools and techniques education reached every part of the world and ICT become an integral part of education. Information and communication technology has a significant impact on the modernization of education. Adopting technologies is in the favour of learners. Digital education is creating new opportunities for teachers and students (Oakley, 2020). The teachers are also benefitted as they can share the recorded lectures with the student which can be used by the students for future references. The students are also able to learn at their own pace and they can have self-directed learning. Digitalization adds fluidity to the education system which is very important in the current scenario

(Emejulu & McGregor, 2019). Digital education is a need of time, especially in a country like India where population density is very high. Digital education provides assistance to give education to the students of remote areas. It is also cost-effective (Ozga, 2016). Digital education provides a platform for the weaker section of students to get a world-class education anywhere, anytime. Digital education transforms the teaching and learning process. Educators construct a positive approach for the students toward digital education.

Digitalization in Education

The 21st century has witnessed rapid development which only resulted due to digitalization. Technology has taken place in every corner and niche which is also seen in the education sector (Buchanan, 2011). Digitalization is penetrating the education system. It is widely seen that a digital strategy is also needed to reframe the education system. Due to increasing population and competition, the education sector needs a cost-effective mode to impart education to everyone (Robin, 2016). To overcome this problem most countries are focusing on the digitalization of higher education. Digitalization in higher education has become indispensable as it allows innovation in the education system which is needed for transforming the future (Irvine and Barlow, 1998).

Digitalization makes the way of teaching more convenient and easier. The education sector is also not untouched by digitalization. Digitalization especially the internet is transforming the traditional way of teaching. In the present digitalized world, students and teachers interact with each other on the digital platform (Malott, 2020). These digital platforms are replacing the physical classroom with the digital classroom. Education is undergoing a rapid expansion and thus digitalization has emerged as a boon for the higher education system (Selwyn, 2013). The appropriate theoretical model helps the teachers and students understand and learn the tools and techniques of digital education. Measuring the effectiveness of digital education is also very essential, so we can do the necessary amendments required in digital education. Digital education has a wide variety of methodologies (Lane, 2012). Those methodologies need to be evaluated and analysed for their effectiveness.

Covid-19 hit the world at the beginning of 2019. Due to this all the colleges and schools had shut down. But the pandemic widened the scope of digital learning in education. During the pandemic, online education increases broadly. The physical classroom has shifted to the virtual classroom. Tools and techniques of digital education play a crucial role to minimize the impact of a pandemic on the teaching and learning process. Pandemic has accelerated the use of digital technology in modern education. Now, online education become an integral part of our education system.

Digital education platform has changed the way of teaching and learning process. In pandemics, online education has grown exponentially and become indispensable. The concept of online teaching has greater relevance during a pandemic. Apart from digital teaching and learning, students are also getting their degrees through online mode. Even online orientation program has also been organized which is a new experience for both students and teachers.

Research Questions

- RQ1: How digital education changing the traditional way of teaching and learning process?
- RQ2: What are the different tools and techniques of digital educations?

The rest of the sections talks about various facets in digital education.

Related Content

Intelligent Prediction Techniques for Chronic Kidney Disease Data Analysis
Shanmugarajeshwari V.and Ilayaraja M. (2021). *International Journal of Artificial Intelligence and Machine Learning (pp. 19-37).*
www.irma-international.org/article/intelligent-prediction-techniques-for-chronic-kidney-disease-data-analysis/277432

A Study on Evaluation and Analysis of Edge Detection Operators
Pinaki Pratim Acharjya, Subhankar Joardar, Santanu Koleyand Subhabrata Barman (2023). *Meta-Learning Frameworks for Imaging Applications (pp. 65-102).*
www.irma-international.org/chapter/a-study-on-evaluation-and-analysis-of-edge-detection-operators/331478

Malaria Parasites Detection Using Deep Neural Network
Biswajit Jena, Pulkit Thakar, Vedanta Nayak, Gopal Krishna Nayakand Sanjay Saxena (2021). *Deep Learning Applications in Medical Imaging (pp. 209-222).*
www.irma-international.org/chapter/malaria-parasites-detection-using-deep-neural-network/260120

Privacy Preservation of Image Data With Machine Learning
Chhaya Suryabhan Duleand Rajasekharaiah K. M. (2022). *Applications of Machine Learning and Deep Learning for Privacy and Cybersecurity (pp. 189-215).*
www.irma-international.org/chapter/privacy-preservation-of-image-data-with-machine-learning/311378

Autonomous Last Mile Shuttle ISEAUTO for Education and Research
Raivo Sell, Mairo Leier, Anton Rassõlkinand Juhan-Peep Ernits (2020). *International Journal of Artificial Intelligence and Machine Learning (pp. 18-30).*
www.irma-international.org/article/autonomous-last-mile-shuttle-iseauto-for-education-and-research/249250