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Digitalization and higher education

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Abstract
We are running into the 21st century where technology knows no bounds. This is the phase of radical development where technology is taking over every niche and corner. Smartphones, laptops, and tablets are no more unknown words. During this phase the education system is evolving for the sake of betterment, as this generation's students are not born to be confined by the limits of simple learning; their curiosity is vast and cannot be catered with educational systems that were designed earlier. If we kept on teaching our children the way we taught them yesterday, we would deprive them of their tomorrow. Our old educational system lacks the capability to stand a chance in the 21st century. So we are compelled to use digitization in our educational system.

Keywords: Digitalization, Digitalization and Higher Education

Introduction
"Technology can become the 'wings' that will allow the educational world to fly farther and faster than ever before; if we will allow it."

- Jenny Arledge

The formation of a knowledge society and the digital stage of development of modern civilization culture still remains a continuing process, which itself is experiencing serious internal contradictions and problems, especially in our country. One of the contradictions seriously impeding the modernization of education is the discrepancy between the speed of digitalization of educational resources and the speed at which the digitalization of the educational process itself, which is still very low. The reform of education is presented in the article by the example of various forms of curricular and extracurricular activities aimed at the active use of digital educational resources including the review of the citywide electronic journal and diary, which has been used for several years

The new phase of learning has begun and involves various advanced techniques like:
- **Onlinecourses**
  Want to learn a new language or maybe to get trained in some specific course, but have no time to cover the distance? Online courses are developed by experts who have unmatched proficiency in their specific field and can give you the experience of real-time learning by designing their own online course.
- **Onlineexams**
  Digitization gave way to the online exam, making the examination process convenient for both teachers and students.
- **Digitaltextbooks**
  Also prevalent with other names like e-textbooks and e-texts, digital textbooks provide an interactive interface in which the students have access to multimedia content such as videos, interactive presentations, and hyperlinks.

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- **Animation**
  This is a captivating approach in which students learn in a better manner. By offering a visual representation of the topic, students grasp the concept in a more understandable manner. Even the toughest topics can be presented in a simplified way with the help of animation.

Accumulation of Students on the Same Platform
With students coming in from various regions, schools and colleges are finding ways to develop an integrated solution to meet the educational needs of all students. By converting the whole of the educational system to digitization, the use of various techniques like online courses, online exams, digital textbooks, quizzes, and e-notes are improving the quality of education for the students.

Online Resources: Connecting Students with Their Educators
With a high increase in the student population in recent times, pedagogy is being compromised. Because of that, online resources are being developed in a way that makes them always available to teachers to educate the masses. Which, in turn, improves the quality of education and increases the number of literate students.

Internet: Making Digitization Possible
After the United States and China, India has been rated as the third largest internet consumer. The core existence of online education platforms is being possible with the internet. Most schools and colleges in India make use of the internet and they basically use it for conducting online exams and quizzes.

Administrative Activities: An Integral Part of the Education Industry
With digital systems being prevalent in education we are experiencing different levels of ease in online education, but the administrative part is not off the table. Keeping the records of students and maintaining their attendance and roll number is a big headache, that too when the students are outnumbering the administrative heads. So colleges and schools are adopting more hassle-free computerized methods and avoiding the old manual methods of maintaining the records.

What are the main advantages of digitalization on higher education?
"Digitalization deemphasizes the top-down dissemination of standardized knowledge*.* As an educator, you go from disseminating knowledge orally, via in-class lectures, to putting it online in a variety of formats, including written text, videos, quizzes, and so on. While, almost by definition, oral lectures are prepared in advance, providing such content online frees up class time for more discussion.
*"*But there are other advantages too. Notably, digitalization opens up higher education to people who wouldn't be able to afford or access it otherwise, such as people living in remote locations. Similarly, digitalization makes it possible for some people to pursue higher education with less disruption to their lives. Individuals who are already managers in a company, with heavy workloads and important responsibilities, may find that online learning makes it easier to combine their professional and family commitments. The possibility with online learning to access your sessions when you want and learn at your own pace is a major advantage for many students. It all very much depends on individual learning styles and short or long-term professional goals.*"*

1. Crafting a New Curriculum: Learning Management Systems and Personalized Learning
With the proliferation of online learning and e-learning tools, it is becoming easier for teachers to introduce blended learning into every course curriculum. Blended learning allows students to have more control over what they choose to learn, at their own speed and time. Class time is spent for advanced problem-solving and group discussion. These concepts have been made possible by Learning Management Systems that give teachers the tools to assign, monitor and evaluate course work remotely. Google Classroom and Moodle are free options; with Moodle being an open-source platform. Schoology is another popular version that operates on a freemium model and has been adopted by School Districts across USA. The benefits have been numerous, with one school district in Nashville having reported cost savings of $1.3 million in the form online teacher training and $300,000 annual cost savings by introducing virtual classrooms.

With more learning being taken online, it becomes easier for schools to collect data about their students, such as monitoring the time it takes for children to complete a section and crunching test scores. With this additional data, instructors can harness the power of Big Data Analytics and Artificial Intelligence to personalize learning modules, which can adapt to the competence level of each student. Again, different students learn in different ways: some prefer text, others audio or video formats, while others may opt for game-based learning. Personalized learning makes all this possible and more. Mika, powered by Carnegie Learning, is a powerful example how AI can help craft better experience for students, especially those with learning deficiencies. Research suggests that the cost of giving remedial education to incoming college students costs roughly $6.7 billion with only a 33% success rate. Mika however, with its one-on-one tutoring, real-time assessment, nudge and help functionality aid students in completing their courses. As all the data is captured, it provides unique reporting capabilities for instructors and highlights areas that need improvement. Research has shown that using Mika has doubled the growth in performance when compared to ordinary students in standardized tests.

2. Changing Classrooms: From Smart Devices to Virtual Reality
Statistics show that one out of three students uses school-sponsored devices, be it an iPad or a laptop. Schools are being structured to mimic the workplace and we are seeing Smart Boards and Smart Desks, which allow more connectivity and interaction between students, teacher and lesson plans. The presence of these devices adds a challenge to the teachers as their roles change from being a 'sage-on-the-stage' to a 'guide-on-the-side.' Medical professors in Georgetown University have begun using iPads to teach their students suturing techniques allowing students to learn at their own pace and interact with the videos. This leaves the professors free to interact with students, provide

feedback and clear doubts. Teachers will have to adjust to this paradigm and alter their teaching strategy accordingly.

3. Connected Campuses: Automated Chatbots, Online Communities and more

Schools and colleges need to revisit their in-campus experience and how they address students' needs. Most administrative staff in educational institutions are usually overworked and technology can play an effective role in easing their pain. Georgetown University's Connected Campus initiative has been well-recognized for their holistic and comprehensive digital strategy. Besides providing 24/7 WIFI connectivity, they strengthened their IT infrastructure, including establishing data towers and strong cyber security controls. They had also launched a mobile app, which takes care of student needs such as orientation of new students through gamification, laundry alerts, ride sharing options, student news and events. Schools and colleges will have to undertake similar initiatives as they seek to improve their student, teacher and parent experiences.

4. The Digital Native: How Educational Institutions Can Prepare in 2018

2018 will be the year when Edtech takes off. Currently valued at over $7 billion, edtech industry is on trajectory to embrace digital transformation. While all the trends may not manifest in this year, we see the groundwork being laid for the future in 2018 itself. What educational institutions must do on a war footing is to upgrade their IT infrastructure and classroom technology. They will have to start partnering with technology companies to have a re-look at their curriculum and teaching methods. Security and privacy will be critical issues in the future as more data is accumulated and institutions might as well build these features in to the system. Now is the time for educational institutions to do their homework well, else they might be the ones ending up last in class.

Conclusion

Digitization has no doubt changed our education system, but we cannot say that it has diminished the value of our old time classroom learning. Neither do we want something so priceless to turn into dust. The best part about the digitization of education in the 21st century is that it is combined with the aspects of both; classroom learning and online learning methods. Walking hand in hand both act as a support system to each other, which gives a stronghold to our modern students. Digitization in education has also proved to be the right method for saving resources. Online examination platforms have restricted the frivolous usage of paper, directly confining the cutting down of trees. This way the digitization of education industry in the 21st century proves to be a boon to our society.

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