

# An empirical study on strategic planning for digitalization in education

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Submitted: 25-01-2021

Revised: 05-02-2021

Accepted: 10-02-2021

**ABSTRACT:** Digital transformation is taken into account as an inevitable process for education systems like all socio-economic institutions and systems. The digital transformation, which paradoxically incorporates both challenges and conveniences, has got to become the main target of corporations' strategies. The aim of this study is to work out the status of digital transformation in universities' strategies. The expressions of the universities about digital transformation are coded under the category of diversity and flexibility of learning technologies, especially education theme and distance/open learning. It is observed that universities have the least digital transformation strategies concerning research and social service missions. In this sense, it was concluded that universities could not perform digital transformation beyond technological infrastructure renewal into an integrated transformation model and strategic vision. The results of the study were compared with empirical and theoretical studies within the literature.

## I. INTRODUCTION

Educational institutions are still reeling from a forced Digital Transformation due to the global shutdown of many institutions due to the coronavirus pandemic. Caught off guard, this has presented a whole new reality for educational institutions whose default mode of operations has largely depended on the in-classroom student experience. Digitalisation is a paradigm shift in how we think, how we act, how we communicate with the external environment and with each other. And technology here is more a tool than goal.

However, it's not almost adding video to the education delivery mix. Video has to be a central part of the Digital Transformation strategy, and when the video strategy is done right, it can enhance the educational institution brand and market reputation. But before any institution starts overhauling their digital

transformation strategy and adding video as an education delivery channel, they need to consider these key elements: a continuity strategy, user experience, video delivery cost and scalability, the role of video analytics, security and the real cost of free platforms. Strategy – Why Online Remote Learning Will get to be a part of the New Normal. Most within the education sector weren't prepared to transition and deliver learning through remote, online means when the worldwide health crisis escalated to an epidemic. Backed by a legacy ecosystem, most educational institutions got to reinvent themselves, quickly. Reinvention means delivering lessons online, accessible on mobile devices, selecting the ideal medium that is engaging and has a high potential to be interactive.

Digital transformation has become the top priority of higher education institutions as well as many other organizations today. Digitalization has become inevitable for higher education institutions to meet many challenges caused by the rapid and various transformations in its environment. This transformation manifests itself as the use of digital technologies in the fields of actors, business management models, syllabus models, information and learning assessment/ analysis programs, cost (finance), success measurement systems and security threats, especially with the widespread understanding of managerialism in the management of universities. The main purpose of digital transformation in education is to revamp educational services and to redevelop the operational processes of upper education.

What is Digital Transformation in Education?

Digital Transformation means enhancing an organization's core business operations to meet customer requirements efficiently by leveraging data and technology. In the education industry, the target customer are often student, faculty, staff and

alumni and digitizing the education sector can benefit both students and school .

Digital Transformation aimed toward enhancing the scholar experience might include:

- allowing students to register for admission via mobile app or web app
- providing a wide array of online learning options
- using technology to track student progress and run intervention protocols
- allowing faculties to organize online classes.

#### Digital Transformation in Learning Environment

Educational institutes have begun to realize the importance of digital transformation in the education industry with the increased use of online classes and video conferencing solution. It is the right time to implement and build technology solutions that will transform the way learning is offered to students. Technology can help bring efficiency to the new learning methods

#### • Video Conferencing Solutions for Overseas Studies:

Online assessments can be done and universities can facilitate virtual onboarding and admission of students. Schools/universities can integrate video conferencing solutions into their app or website to allow students in different countries to continue their studies. They can attend online classes and webinars and attend physical classes once international traveling is permitted.

#### • AR/VR for the better learning experience:

Virtual Reality and Augmented Reality can create an interactive and virtual environment for students. These technologies can make the process of explaining complex concepts easier by implementing an interactive visual-audio factor, helps to deliver a practical explanation of educational concepts and students can understand it effectively.

- Adaptive Learning involves using specific teaching devices to handle interaction with learners. It is wont to deliver custom solutions to satisfy the training needs of particular individuals. Adaptive Learning is additionally defined as an academic system supported data analysis that facilitates faculties to watch students' performance and adjust programs to each learner's needs.

#### • Learning Apps/Platforms:

Many educational institutes are turning into edtech startups and launching learning apps for college kids using which students can access notes,

their curriculum and provides mock tests for exam preparation. It helps them continue their studies with none interruption.

#### • AI and Chatbots:

institutions are looking to adopt the use of chatbots to meet student expectations while maximizing faculty time. AI-enabled chatbots are often wont to analyze students' responses and supply them the training content supported their choices. Chatbots using AI also can be wont to teach students by converting a lecture into a series of messages to form it appear as if a conversation. The bot can evaluate the extent of understanding of the scholar and deliver subsequent a part of the lecture accordingly.

Needs to be considered while thinking about digital transformation in education sector.

#### • Identify the Areas of the Institution to Go Digital:

Firstly, it is required to identify where to implement technology into the educational workflow. Considering what should be transformed help proceed in the right direction regarding digital transformation.

#### • Connect everything to support tomorrow's digital world:

Set up potential strategic partnerships and develop an ecosystem that connects your processes, people, and things to build an interaction network that is smart and secure.

#### • Deploy analytics to automate, understand and save money:

Before going digital, it is also essential to use real-time and real-life data to plan strategic initiatives to roll out upgrades, enhance performance and make infrastructure decisions.

#### • Roll out new business models:

Digital transformation means rolling out new business models which will drive growth, revenue and improve branding. Ensure to spot new business models within the educational workflow which will bring transformation and enhance the general experience for both students and education providers.

#### • Move towards a single, simple platform:

Digital transformation is about easing and enhancing existing models, not complicating them. Therefore, it's always to maneuver towards one, simple and custom platform rather than counting on multiple software and tools to perform some action.

#### Digital Transformation in Teaching Methods

#### • Smart Class:

Whether it is an online classroom or physical classroom, the digital whiteboard can help you engage students effectively with interactive learning methods.

- AI-driven Online Assessments:

The evolution from the pen-and-paper approach to a web and automatic platform acts as a cornerstone within the education sector. As colleges and schools are shut down, educational institutes have shifted to online teaching methods. Artificial Intelligence has made it possible for educational institutes to conduct online examinations with the help of the internet and computer network.

- AI-based analysis of students:

Universities and schools nowadays need to face tons of challenges, including high dropout rates, the ineffectiveness of a standard, “one-size-fits-all” approach and disengaged students. AI and big data analytics can help create personalized learning experiences and resolve challenges. A personalized learning experience allows students to enjoy a singular educational approach that's completely tailored to individuals' needs and skills. It can enhance student's productivity and reduce their chances of throwing in the towel.

- AI-enabled remote proctoring:

Remote Proctoring is a technology that allows educational institutes to conduct online examination that prevents students from involving in any unfair means. Online proctoring with a mixture of integrated web camera and AI-powered face recognition algorithm. It offers massive opportunities for online evaluations. It does not require manual invigilators to keep an eye on students during the examination. AI-assisted facial recognition and tracking system allows a student to be tracked remotely and the contents of their computer.

#### User Expects A Smooth Video Playback Experience:

It is the clear expectation that video streaming and playback experience should be without buffering, long load times, and 0 pixilation. Technological advances like adaptive bitrate streaming create multiple versions or renditions of each video and can automatically detect user bandwidth and dynamically offer the correct rendition to ensure smooth playback at the highest streaming quality possible.

#### Scalability for Live & On-Demand Video Experience:

As more and more students check in and consider digital learning sessions, it's crucial for educational technology

platforms to be scalable to cater to spikes in user traffic. However, a rise within the number of users will cause the increase within the storage and bandwidth costs of delivering video. By leveraging Context-Aware Encoding in video delivery, educational institutions can reduce the value of storing and streaming video without hampering video quality. Context-Aware Encoding (CAE) uses machine learning and deep video analysis to realize optimum quality for every video with the fewest bits necessary. This also enables good quality video delivery to low bandwidth environments, which is often critical to patchy Indian networks.

#### Video Analytics That Goes Beyond Clicks and Views:

Video analytics can provide deeper insights into audience viewing behaviour. It also can play a pivotal role in providing detailed data on the program effectiveness and students' learning performance. Educational institutions can collate and analyse students' learning performance and progress as well as identify any gaps in learning with analytics data. These observations can help institutions to further develop and refine video-assisted courses to make sure all students are found out to succeed.

#### High Cost of Free Presents A Security Trade-Off:

As with any technology adoption, content security, piracy, and user privacy are key concerns for many educational and online learning organisations. There has been an explosion of tech platforms which will enable or deliver online learning, including free tech platforms that are tempting for a few organisations looking to minimise costs. But there is a trade-off between free and secure. Opt for a free platform and end up exposing business and users to a host of unfavourable elements such as inappropriate advertisements, low level of security, pirated lessons, and loss of privacy. Choosing a platform that has a robust security protocol built-in that not only respects and protects the privacy of the user, but also protects the business of online learning.

Content security and piracy are easy to manage with two of the most widely used industry technologies, such as Encrypted HTTP Live Streaming (also known as encrypted HLS) and Digital Rights Management (DRM). DRM can prevent video assets from being played back without permission or authentication. Educational organisations can easily secure

their content with watermarks, token protection, restrict access by geography, domain, IP address or publication date, so that content is accessible only from within approved networks and meets specific security obligations for distribution. All of this might sound like extremely sophisticated security protocols, but protecting their core product shouldn't be negotiable for the education sector.

The digital transformation within the education sector will progress rapidly in 2020 and beyond, and beyond the four walls of a classroom environment to lessons being delivered via video and over the cloud, within an internet site or in an app environment. The new normal will mean that both educational institutions and students are prepared to modify between in-classroom experience to a home-based remote learning environment, seamlessly and with none disruptions. The tech is out there today to make sure that educational institutions can build a

strong 'digital business continuity plan', which may make their business, or lack thereof, break their business.

## II. CONCLUSION

Different studies have established that a multi-sensory environment, which connects sight, sound, and touch, helps students in developing thoughts and improve their social skills. Students then are ready to learn faster and retain information longer. Some research studies indicate that, on average, students retain 25–60% more data from online learning compared to only 8–10% from classroom learning. As a result, video-based online learning presents an efficient solution to the challenges in remote learning. With the digitization of the training experience, both students and teachers can enhance their skills to make an enticing educational process.



**International Journal of Advances in  
Engineering and Management**

**ISSN: 2395-5252**



# IJAEM

**Volume: 03**

**Issue: 02**

**DOI: 10.35629/5252**

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