



## **Leverage of Digital Technologies on Higher Education Institutions in Knowledge-Economy**

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### **Abstract**

This paper examines the impact of digital technologies on higher education institutions. It then looks at the changes that have been brought about by these technologies and how they might be leveraged for higher education institutions, including their effect on cost and quality, and the role of institutions in driving innovation. With increased leverage and high-impact change, universities are becoming more responsive to their community's needs which are essential for the continuance of their role in society.

**Keywords: Digital Technologies, Higher Education Institutions, Knowledge-Economy, Education Management System, Collaborative Learning**

### **Introduction**

The leveraged power of digital technologies has been gradually improving the academic environment in the world. By harnessing this technology, universities and other educational institutions can create knowledge and share it with the masses. Furthermore, they can make their content more accessible to a wide range of audiences by using the leverage of digital technologies. In addition, the technology is used to facilitate learning and teaching, build a supportive social community and enhance efficiency in administrative roles. One of the most important achievements in the years of intensive development in digital technologies is that it has enabled universities to improve the quality of their education, offer more resources to students, and help them develop cooperative relationships with each other. In other words, the leverage of digital technologies has positively impacted higher education institutions. In the current paper, we focus on the benefits of leveraging digital technologies.



## **Objectives of the study**

These are the following objectives of the study

- To study the leverage of digital technologies on higher education institutions.
- To explore various challenges faced by higher education institutions during the implementation of digital technology.

## **Research Methodology**

This study is compiled with qualitative research methodology, by using the secondary source of information from different sources. This paper focuses on the leverage of digital technologies on higher education institutions in the knowledge economy and explore the concept of digital learning, digital education and the digital environment.

## **Literature Review**

In the last few decades, the nature of learning and teaching has been transformed by technology. This shift has occurred due to the emergence and increase of digital technology in education, which can be regarded as a major contributing factor for the evolution of higher education (Brown et al., 2008). Over the past few decades, many changes have occurred in learning and teaching practices; these changes provide grounds to investigate what is driving such a profound effect on higher education institutions (HEI). The segment will give an overview of how digital technologies impact HEI through its transformation process from knowledge economy into learning economy. Additionally, it will present some literature reviews on the Leverage of Digital Technologies on Higher Education Institutions in Knowledge Economy and discuss them based on their implications and consequences.

The knowledge economy is a term used to define an economy where knowledge, innovation and creativity are the major contributors to growth and development. The knowledge economy is also regarded as the third major economic system after the agricultural and industrial economies (Bejinaru, 2019). In order to analyse changes in higher education in this knowledge-based



economy, it is important to understand the definition of knowledge as well as its characteristics which include:

As an economic development strategy, higher education institutions (HEIs) play a vital role in implementing any country's long-term socio-economic goals and objectives. Regardless of whether developing or developed nation, growth and progress of a nation cannot be achieved without a strong foundation in science and technology. Innovation is a key concept that can be used to describe how innovation takes place in a country (Moahi, 2012). Innovation largely depends on the availability of resources and its disposition on technological fields that are not only necessary for economic growth, but also essential for the next generation's quality of life. Therefore, countries should allocate appropriate resources to higher education institutions that support them to innovate and produce new knowledge and products (Brown et al., 2008). In order to satisfy their increasing needs for the knowledge economy, countries must invest more funds in higher education institutions. This will increase the capacity of HEIs to generate new knowledge and skills which will create more jobs for the skilled workforce. Knowledge economy will bring many benefits to higher education institutions (Trani & Holsworth, 2010).

Although the benefits of the knowledge economy are numerous, it is not without its disadvantages. With the increased importance of knowledge in the global economy, nations must allocate the appropriate amount of funds for their higher education institutions which can be used to create new products and services that are needed in society. On the other hand, this would require HEIs to consider their future needs regarding research and development (R&D). If not properly planned, it may create high pressure on faculty members who have to undertake more teaching jobs because insufficient funds are allocated for R&D (Marginson, 2010).

The Knowledge Economy is also described as an economy where higher education institution (HEI) plays a fundamental role to transform higher education into a knowledge-based economy. It would involve the transformation of many aspects that influence HEIs including (Bhattacharya & Sharma, 2007).

Digital technology has shown great potential in transforming higher education institutions through assisting with most aspects of it. This will be achieved by applying digital pedagogy,



which can be defined as 'an amalgamation of educational technologies and teaching to improve the quality, efficiency and effectiveness of learning experiences'(Carayannis et al., 2006). The main reason why digital technologies are considered as one of the major contributors in transforming higher education institutions is due to their ability to enhance interactivity between faculty members, students and other stakeholders involved in the HEI. Moreover, digital technologies provide great benefits especially for students by raising their engagement in the learning process(Sridharan et al., 2010).

### **Leverage of Digital Technologies on Higher Education Institutions**

In higher education institutions, leveraging digital technologies can produce multiple positive outcomes. First, leveraging digital technologies allows educational institutions to build international cooperation and partnerships. It creates a platform for them to share and exchange knowledge and resources more efficiently and cost-effectively. Leveraging digital technologies also allow universities to collaborate and work with various organizations, corporations, foundations and other institutions.

In addition, leveraging digital technologies helps universities launch a variety of innovative academic programs and create a better learning environment for students. Although leveraging digital technologies is attracting the attention of many universities, there are still many challenges to overcome. For instance, universities have to be able to initiate their work on digital technologies, cope with the complexities of digital technology, and integrate them into the curriculum.

Furthermore, leveraging digital technologies can influence universities' research work. One of the biggest challenges for universities is that not all of their resources are available in digital form. In addition, their data is not always available to other institutions or the public, leading to a lack of knowledge and the possibility of plagiarism. As we know that academic freedom is an essential component in the education system in India, we can say that leveraging digital technologies can improve universities' available resources and their abilities to provide higher education services. In the past, universities in India used to function under rigid and strict rules and regulations. Presenting and sharing information were restricted by many administrative



issues such as censorship; moreover, universities were also time-consuming in sharing information because they needed permission from government authorities before sharing it with other academic institutions around the world.

In addition, higher education institutions in India were slow to adopt digital technologies. To overcome the barriers of information sharing, new strategies have been developed. For instance, some researchers have opted for open-source software, which allows for more direct publishing. In other words, the new approach encourages researchers to publish their work in a faster and easier way because this method of technology allows them access to a wider range of information and resources that would otherwise be unavailable.

Leveraging digital technologies enable universities in India to provide advanced infrastructure and facilities to students. They have numerous opportunities for research and new ideas through the use of educational technology. Students in India can directly communicate with their teachers and access more information on their courses. They can also interact with other students around the world in an efficient manner. Using this technology, students can also collaborate to increase their knowledge.

Digital technologies allow students to collaborate and work together in real-time using various tools such as blogs, podcasts, social media sites, podcasts and wikis. However, the technology is still not fully used by universities in India. One of the main reasons is that many Indian universities are facing issues related to censorship; they are also dealing with dilemmas about Internet regulation because government authorities limit some of the content available online today.

Leveraging digital technologies can help universities to improve their reputation. In many ways, universities in India are becoming more visible to the public that is why they can be treated as a national resource. In this regard, leveraging digital technologies could be integrated into the curriculum as a key component to increasing the efficiency and effectiveness of educational institutions.



In general, leveraging digital technologies can improve higher education institutions in India by providing a competitive advantage because these institutions have a lot of opportunities to build strong cooperative relationships with other institutions around the world. They also have more resources and opportunities for research work. Furthermore, these technologies can enhance the academic field in India by giving more benefits to students and academics.

One of the many advantages of leveraging digital technology in educational institutes is that it can be used to provide students with more resources and opportunities. For instance, some educational institutions use digital technologies to publish mathematics textbooks; they also help teachers create interactive online workbooks for students.

Leveraging digital technologies also enables teachers and students to exchange information more efficiently about current events. In addition, digital technologies can be used to provide students with information about current global issues. At the same time, teachers can send their documents to students via e-mail or other digital methods.

Digital technologies are also used in educational institutes for research work. For example, some educational institutes are using digital technology to create a database system through which they can access more information on various topics. The database can be created in an easy and fast manner by using smartphones, tablets or other devices that can connect to the Internet.

Leveraging digital technologies can also improve educational institutes' facilities, especially in rural areas where there are not enough learning centres. In this scenario, the use of digital technology can be effective by providing more resources and opportunities for students. With these technologies, students have more time to spend at educational institutes learning from the teacher because they do not have to travel a long distance each day to attend the educational institute.

As more digital technologies are introduced into educational institutes, more jobs are created for teachers and administrators. For instance, teachers need to be trained to use technology in the classroom; they also need the training to understand how best to use it; they also need to know



how different apps work with each other. Administrators need training on how to ensure that data is secure and protected against hacking.

Leveraging digital technologies in educational institutes can result in time savings for educational institute officials. For instance, some of them can use these technologies for administrative purposes; they only have to send emails or make phone calls after educational institute hours instead of coming into the educational institute every day. For educational institutes that do not have enough teachers, digital technologies can also help through new opportunities.

Leveraging digital technologies in educational institutes can provide more opportunities for students. For instance, this technology allows students to access information without leaving the building, thus providing them with more flexibility. This system can allow students to learn while doing other activities such as reading or working on assignments. Furthermore, digital technologies provide young people with a way to connect with people all over the world in real-time.

## **Digital Technology Has Altered Many Aspects of Higher Education Institutions**

Digital technology has altered many aspects of higher education institutions including:

1. Education management system (EMS) -This is a web-based system that enables faculty members, staff and students to access the information that they need while they are on campus. The system also allows the users to share the data with others, which can be accessed at any time and place. The information that can be viewed through EMS includes:
2. Learning management system (LMS) – The main purpose of LMS is to enhance academic workflows ranging from teaching, learning and assessment. This makes tasks easier because it reduces the effort of faculty members to produce new materials for their lectures. Moreover, it provides a platform for instructors to share their works effectively with other teachers as well as students who can also contribute to improving teaching



materials. LMS can be used in any kind of facility whether it is a university campus, institutes, hospitals, government agencies and others.

3. Digital library –This is a large collection of digital resources which can be accessed by its users anywhere via the internet. This also helps create a space for the exchange of information between professionals and other stakeholders involved in HEI.
4. Digital archives –The digital archives provide a means to preserve valuable information that may become obsolete when new versions are released. It also helps in preserving data when there is no possibility to launch new versions due to hardware failure, etc.
5. Virtual libraries –This is an online library that offers the same services as the real books in a physical library. It enables students to search for information, read, download and print/copy them for their references.
6. Virtual campus –This is an online campus that offers information to its users about HEI facilities including courses schedule, course materials, assignments submissions and assessments. This helps the student identify their strengths and weaknesses to improve their performance in the remaining courses.
7. Distance learning system –This enables students to be connected with other students or instructors located at remote places via the internet. This is useful for students who cannot attend lectures or lectures due to their work, which enables them to follow the course lectures virtually.
8. Collaborative learning –This enables students to learn in groups. This helps them to discuss, share and resolve issues related to the course materials/topics. It also provides them with space where they can share their ideas and thoughts with other classmates.
9. Tagging -This is a technique used by instructors to attach keywords or labels to objects such as documents, videos or images that are available online. The purpose of using this technique is for users to connect relevant information that is found online about each other.



## **Challenges: Digital Technologies and Higher Education Institutions**

Educational institutions which provide higher education across the globe have been facing a set of challenges with regards to digital technologies in this century. The use of these technologies has been gaining popularity and is being deemed necessary for effective teaching. In this segment, we will be exploring some of the most critical challenges in this regard.

The first challenge is the constraints on time and space. Digital technologies often restrict physical presence with their users, thus creating a sense of distance between them when they are engaged with the digital world instead of their actual environment where they exist physically at that time. A second challenge is related to student engagement levels when using these technologies for study purposes. Students may be so engaged with these technologies that they are no longer able to focus on their daily activities at school unless they are made aware of the potential difficulties which have emerged due to this new phenomenon. The third challenge is related to the assessment of students' performance. Traditional assessments are becoming difficult to perform when students are engaged with digital technologies because it would be very hard to determine whether or not they have applied required skills through using them instead of traditional ways of study. The fourth challenge is related to the strain on financial resources for institutions that often have strict time schedules for allocating funds within a year, unlike digital technology companies who have more time for this purpose due to their less rigid demands in terms of expenses and costs.

Some other challenges are influencing digital technology in higher education institutions. One of these is related to the opportunity for students to choose their course of study based on the existing availability of digital technologies. Secondly, there is the potential for the institution to form an online community with similar interests between students who would be able to interact with each other through these technologies. Thirdly, professionals who are educated through digital learning could be more likely to lead a more productive lifestyle due to their acquired knowledge. Lastly, this type of technology could potentially have an impact on politics too - an effect that would influence political decisions made by governments due to technological advancements.



## **Strategies to overcome challenges in digital learning**

Institutions should try to encourage students to engage with digital technologies positively because when they do so, it would be possible for all of them to feel incorporated into the digital world rather than having to become spectators when they are involved with the use of such technologies. This means that by providing and creating resources and engaging in activities that would make students feel like they are in a digital world, these institutions could provide a positive experience for them while at school and thus benefit from this new phenomenon.

Secondly, institutions should provide methods of engagement that would be directed towards the teachers. One of these methods should include giving them training regarding digital learning and its advantages while at school, while another method should aim at encouraging them to apply these technologies in their daily activities while at school. This would create an environment in which teachers themselves would encourage their students to use these technologies in their learning environments.

Finally, institutions should consider ways in which they can mitigate the financial constraints which they face when using digital technologies. One of these methods is by exploring the possibility of finding sponsors to help finance them in this regard. Another method could be found through finding support to help reduce costs that are incurred when adopting digital technologies into school settings.

Information regarding these methods must be shared with everyone who benefits from this technology so that a sense of unity and cooperation could be achieved among them. Institutions should be able to apply a positive way of dealing with the potential issues arising from the use of digital technologies. One of these methods could be having a system that would be able to monitor students' performance and provide them with feedback regarding their success in using these technologies appropriately. Another method could involve having an online forum through which students could communicate and interact with each other as well as their teachers.



In conclusion, there are challenges which Institutions face due to the use of digital learning tools. Institutions should be prepared to deal with these challenges as they arise because they must know how to cope with them healthily before it is too late.

## **Conclusion**

This article provides insights into the potential impact of leveraging digital technologies on higher education institutions in a knowledge-led economy. From the emergence of new pedagogical tools to the evolution of traditional academia, this study also explored how these technologies may disrupt or enhance academic learning experiences. The study posits that, like e-books and e-commerce, digital technology has brought significant improvements in productivity to higher education institutions. It has also contributed towards creating both challenges and opportunities for higher education institutions to pursue their objectives in an increasingly competitive environment. Given the fact that new competencies are required for staying relevant, this study addresses how these technologies will impact the teaching of higher education. To achieve (and maximize) their potential, this paper proposes that key stakeholders in academic institutions should be involved in crafting guidelines for optimal utilization of these tools. This article also discusses how digitalization may contribute to institutional differentiation through its use of concepts like peer review and peer assessment systems. The author then stresses the need for developing more flexible academic models, which can enable more flexible lifelong learning, leading to increased productivity and sustainable innovation within universities. Lastly, this paper concludes with some empirical examples of how digitization has changed the knowledge world so far.

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