

Future of Higher Education in the Era of Digital Transformation

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Abstract: A significant number of educational stakeholders are concerned about the issue of digitalization in higher educational institutions (HEIs). Digital skills are becoming more pertinent throughout every context, particularly in the workplace. As a result, one of the key purposes for higher educational institutions has shifted to preparing future managers to address issues and look for solutions, including information literacy as a vital set of skills. The research of educational technology advances in higher education is now being discussed and debated, with various laws, projects, and tactics being offered. Digital technology has been a part of the lives of today's children from the moment they are born. There are still many different types of digital divisions that exist in our society, and they affect the younger generation and their digital futures. Today's students do not have the same level of preparation for the technology-rich society they will have. Higher educational institutions and teaching should go through a significant digital transformation to fulfill the demands of today's generation and the fully digitized world they will be living in. The COVID-19 pandemic has quickly and unexpectedly compelled HEIs and the educational system to engage in such a shift. In this study, we investigate the digital transformation brought about by COVID-19 in the fundamental education of the younger generation. Additionally, the study investigates the various digital divides that have emerged and been reinforced, as well as the potential roadblocks that have been reported along the way. In this paper, the study suggests that research into information management must better address students, their increasingly digitalized everyday lives, and basic education as key focus areas.

Keywords: Higher education; Digital transformation; Technology; Teaching and Learning

1. Introduction

One of the greatest moments of uncertainty for higher education in recent memory is currently underway. The pandemic has profoundly affected every single person and area of education. However, doubt does not solely come from that. The skills we learn in school are continually changing and becoming obsolete in a few of years since technology advances so quickly. It is possible that some of the most intriguing job openings will be for positions that do not even exist yet in fields we cannot even envision. In order to satisfy the demands of a developing national analog industrial economy, higher education underwent significant change in the 19th and 20th centuries. Higher education is undergoing another transformation right now, this time to meet the demands of a digital, global information economy. What form that revolution will take, however, is a matter on which people fundamentally disagree. Higher education used to be a privilege reserved for a select few members of society, but it is now more of a prerequisite for success, family care, and tackling the world's most pressing issues. Traditional education still has a place, but we also need access to lifelong, skills-based education that is available to people at any stage of their lives . We must acknowledge how quickly technology develops and how much the conventional model restricts access to education. According to experts from across higher education, education should be less regimented and allow for more variation. They advocate for new courses, numerous streams, and a larger range of credentials so that people can retrain as needed and use their new abilities right away. All stakeholders will benefit from improved teaching, learning, and university operations if they have a better knowledge of the skills needed in the future and how universities are educating students to develop those skills. Having this insight is essential, especially in light of how quickly the workplace is changing. The main reason behind this transformation is technological advancement. Higher educational institutions professors, and students must get ready to accept the uncertainties brought on by technological upheaval. However, no one can anticipate the future, and upcoming events are hard to foresee. Recent developing technological advances are forcing a dramatic reassessment and conversation about the necessary skills and abilities to succeed in the globalized world of the twenty-first century. Increased automation is disrupting employment opportunities and higher education delivery due to changes in labor demand, occupational sectors, job skills, and career prospects. Educational academics and policymakers are debating future career paths and higher education challenges . Colleges will be affected by this. In the context of developing technology, uncertainty regarding the appropriate course higher education institutions should take in building flexible, strong

educational support systems to satisfy educational and future employment objectives is crucial. Universities will continue to be crucial in equipping students with the skills they need to succeed in the workplace of the twenty-first century. Higher education institutions are finding it difficult to effectively plan, strategize, and anticipate the range of desired educational objectives due to the rapid advancement of technology. To be able to fulfill their role as major contributors to assisting students in preparing for the workforce in the future, they need to be able to do all of this. Due to technological advancements, educational institutions will be compelled to offer more courses that place a heavy emphasis on technical, higher-order cognitive, knowledge based, and digital skills at the expense of more integrated, collaborative, multidisciplinary, and cross-cultural learning approaches. Some people also assert that as a result of technology, the relationships between students and institutions in terms of learning expectations and needs are changing. It has promoted the development of competitive and alternative learning to enhance flexible, in-depth, and individualized learning experiences.

2 What is Digital Transformation?

Digital transformation is the strategic integration of digital technologies into all areas of an education, fundamentally changing how it operates, delivers value to students, and maintains its competitive edge.

3. The Role of Technology in Digital Learning

The growth of internet-based technologies has altered the academic environment and helped colleges and universities undergo a digital transition. They have proved particularly helpful in improving communication between students and teachers in higher education. Even though historically, this kind of technology has mostly taken place in the classroom, it is clear that it no longer just occurs in this location and that it may now happen practically anywhere and at any time pushing students and teachers should support the revival of digital transformation use in modern culture. This strain has been acknowledged by certain authors, who claim the advancement of technology in the world's fast transformation demands must be met through higher education. Students use mobile gadgets to refresh their learning processes and increase their efficiency in their daily work. Also, students have developed because of the accessibility of knowledge and are more autonomous additionally; educators have modified their methods and taken advantage of increased accessibility. However, this could also call for more accessibility, as there are many instances where students communicate with their professors anytime or at night. It is envisaged

that universities and other comparable organizations would be involved in creating and executing infrastructures for technological communication that will provide them access to the right channels for learning their viewers. Additionally, these technologies ought to give students and teachers the resources. To fulfill the teaching and learning objective, they must encourage their contact. A study on HES students' views, attitudes, beliefs, and standards of privacy and trust surrounding online activities such as social networking, web surfing, and addition, to be aware of institutional policies students believed that their electronic learning within the university was private. Other factors analyzed included the supportive medium, the impact on presumed privacy, the effects of institutional policies on follow-up, and the potential loss of privacy and trust. A study was conducted to investigate the influence of social networks on cooperative learning. This was done in light of the fact that social media are evident in a student's everyday life and therefore could be an effective tool in supporting in the teaching context, with peers, and with teachers. Social media use enhances student engagement, peer contact, and student-teacher interaction. Other research points to peer contact and course participation as factors that significantly enhance collaborative learning. The ability to develop measures to support, promote, and motivate the application and use of social media in an online learning environment, as well as to provide effective implementation and monitoring for teachers with increased adoption of social media, may be advantageous to students and educators of institutions with great outcomes. Highly focused research using Wikis in the context of learning and education may be advantageous for students. The findings revealed that most students utilize wikis for the chance to collaborate but also because of concern that the information can be improperly changed. Consequently, the authors realized that students would not use wikis even if they provided benefits. Another study on the assessment of the perspective of digital learning is that learning has been impacted by technological advancement and that, as a result of the opportunities offered by digital technology, the academic community has improved its understanding of implicit technology and how it is perceived and used by all. Digital learning made it easier to comprehend the possibilities, advantages, and constraints of the technology that should be researched for use in academic learning. The effectiveness of students' use of e-learning platforms was examined in different studies this analysis looked into the students' reliance on, adoption of, and integration of technology into academic activities. The study patterns vary, and students' opinions of the platforms' utility and usability are related to their desire to utilize them successfully. Therefore, institutions should

encourage and support integrating e-learning platform functions into teaching-learning activities. The emergence of new technologies, digitalization, and professional efficiency is altering people's lives, work, and businesses. The impact of technological advancements on institutions, society, and quality of life provides substantial problems for the employment market in institutions and digital transition. Jobs now performed by faculty will change due to digital learning's constant and continuous advancement and certain jobs may even become obsolete. According to studies, many activities will change significantly, and many people will need to adjust to new abilities' requirements. As digital technology replaces more antiquated working practices, traditionally well-defined operations become more complicated and collaborative. For employees to adapt to changing work and processes, institutions' faculty must build digital skills in the new digital era. Technical, empirical, social, and personal organizational abilities can be classified as necessary for the new technology paradigm, according to Leonardi & Treem, the use and development of organizational skills impact one's capacity to create networks or tackle difficult challenges connected to creativity. Business and Higher Education, with an emphasis on human resource management. Erol & Yildirim, contend that multidisciplinary mentoring is essential for fostering creative problem-solving in an environment that is complicated and constantly changing, such as one associated with technology in the educational sector. Global sources of innovation, policy, knowledge, and resources include higher education. It is crucial for the growth of new professional abilities in the faculty members which impacts the learning fundamental. Concern has been raised concerning the educational gap in new technologies and innovations, which are frequently absent from Higher education institutions and curricula. One of the main causes of unemployment has been a lack of essential graduate employability. Higher education must keep up with the rate of technological advancement to ensure that the technical and non-cognitive skills of faculty members it is necessary for future employment will be acquired; jobs will be hard to come by for people lacking the necessary talents. To effectively address the skill requirements of the emerging technological job market, Higher education institutions must be creative in their teaching and learning procedures. In an environment of uncertainty, unpredictable change, and significant risk, the faculty of institutions will be required to participate in complicated processes of developing fundamentally new technologies and businesses and updating the decision-making power. Professionals will be accountable for a wider range of activities and will need to comprehend the links between students and teachers. A mindset focused on creating and sustaining networks of

specialists who can work together on demand to identify suitable answers to specific challenges will be necessary due to this increasing breadth and complexity . Faculty work will concentrate on the limits of knowledge-intensive activities, where creativity and problem-solving flexibility will be essential for competitiveness.

4. Digital Transformation and Higher Education Institutions

Higher education is changing due to digital transformation. In the digital transition, higher education is evolving, not just concerning instructional techniques but also in anticipation of the current abilities that must be imparted, including hitherto unrecognized non-cognitive, technological organizational, and program administration traits. Non cognitive skills, sometimes called digital skills, are increasingly vital for professionals in the age of digital transformation because they may help them make better decisions, fix issues, and manage their teams. New graduates, executives, and digital learners need innovative tools and methodologies to increase digital skills and employability. The workplace environment has transformed due to digital transformation. More focus is being placed on its social and emotional aspects. The non-cognitive skill of emotional intelligence, which is the capacity to comprehend, use, and control emotions, is required for administration, customer relations, and decision-making. On the other hand, as technology develops toward more mechanical and digitalized systems, such skills become more crucial. McMurtrey et al. examined the importance of knowledge, technical, and nontechnical skills in a successful professional setting emphasizing information technology. In order to support an appropriate university curriculum for the upcoming years, he highlighted crucial nontechnical skills in the information technology business. Jackson discovered that Higher education institutions considered “knowledge” the most crucial talent, but faculty valued interpersonal abilities like dependability, responsibility, and empathy more than technical ones. Researchers have looked at the significance of non-cognitive skills as educational objectives in light of the hypothesis that social and emotional skills can have a positive impact on one’s professional efficiency. The two categories of intrapersonal and interpersonal abilities of faculty members may be used to frame the broad concept of social and emotional competencies. Effective conduct requires intrapersonal abilities (such as realistic goal-setting, a positive outlook, self-control, emotional management, and coping mechanisms). One needs interpersonal skills, such as social problem-solving, viewpoint-taking, conversation, and listening, to engage with people. In the context of the Information Age, attention has turned to psychological and social abilities. Stronger

problem-solving skills are required when communication and service delivery becomes more rapid. The literature has identified faculty collaboration, creativity, real concern, negotiation and communication, versatility, the ability to cope with timeframes and psychosocial factors, and observational, transdisciplinary, and systemic thinking as the soft skills that are most important for faculty members and institutions. The process through which psychological and social competencies are developed is known as student learning. Through this technique, it is possible to gain and effectively use the knowledge, preferences, and skills required to comprehend and control emotions, set and achieve positive goals, experience and demonstrate empathy for others, create and uphold good interactions, and make ethical decisions .In order to enhance learning capacity, it may be tempting to compile a list of digital skills; nevertheless, what is important is how these talents will be integrated into a continual transformational process where students learn to generate information to fit various activities and contexts . Several research studies have looked at how digital skills may be developed in a collaborative learning environment and how many external stakeholders can be included in the curriculum creation]. According to Bond et al. , pedagogical approaches to developing digital skills in higher education can benefit from being integrated with the students and faculty members. As a result, the educational system must ensure that students are receiving adequate instruction certification in digital learning to prepare them for the changing nature of institutions . Higher education institutions are extremely important when it comes to solving technology-related joblessness in developing nations. The scarcity of competent workers and the hardship that results from it are serious problems for these businesses. One of the most serious causes of poverty in emerging nations is employability, which is highly correlated with inadequate higher and technical education. Technology and innovation are essential components for increasing growth in these societies. For Higher education institutions in these nations, training workers to meet the demands of institutions must be a top priority since, despite a booming digital market, there are currently not enough experts with the necessary new skills . However, even though Higher education institutions in advanced economies have a crucial role to play in tackling this issue, they frequently function in a dysfunctional manner, acting more as institutions with the social purpose of qualifying professionals both technologically and as community members than as institutions with the public purpose of acting as certifications of knowledge and experience. The impact of this failure on technological education is particularly worrisome. Higher education institutions must train their employees to meet the demands of educational institutions and digital

transformation. In order to assess the curriculum of several digital courses in a developing nation, data from participant observation were gathered to better understand how students felt about their applicability, certification, the graduation process, and the development of their Digital abilities at Higher education institutions. Additionally, the desired professional skills and profile as envisioned by the employers; the course's goal and alumni profiles; and the advantages of professional student growth. To browse the data and contextualize the topic of the study. For instance, those that said "team spirit" or "cooperative learning of faculty" were categorized as collaborative work abilities, while the ability to communicate ideas. Categorizing content items into analytical categories of abilities, we developed categories by content elements grouped by their relatedness.

5. Higher Education Future

Before COVID-19, higher education had not undergone a significant shift in decades.

We wonder what will shape higher education in the upcoming decade more than 20 years into the 21st century. A new pedagogical method has emerged as a result of the contemporary Information Age. Learning can be done in ways that are more active, collaborative, self-paced, adaptive, experiential, and individualized. The pandemic and the additional virtual settings in the blended model have expedited everything. Higher education is now more inquiry-driven and learner-focused, with lectures taking on the role of facilitators in what are known as "flipped classrooms". Despite the present trends, it is important to critically study the most recent advancements in learning theory, didactics, and digital education technology in light of the rising digitization of higher education. The landscape of higher education is anticipated to alter, taking into consideration technological advancements in society not as an isolated force but rather as part of a larger context. The anticipated change will be brought about by changes in industry knowledge and competency standards, social changes brought about by an increasingly digitalized world, new developments in didactics reflecting ongoing discussions in the field of didactics and learning theory, and new uses of digital technologies that are likely to result in the creation of new learning environments and modes of instruction. The literature makes it abundantly evident that the economic view of higher education's future places a strong emphasis on students, labor-market requirements, and labor-market content. The importance of learning and the abilities and competencies that students will need to succeed in the workforce are highlighted from the perspective of educational science. From a technological standpoint, computing is the only

discipline where digitization and digital transformation are major themes. The view into the future of higher education must combine all of these perspectives into a unified, all-encompassing viewpoint. Demand and the freedom to shape and modify higher education, which is governed by governance regulations such as legislation, financial techniques, and quality assurance, are key factors in the question of how higher education might appear in the future. The distinction between physical and virtual learning is blurred by the use of digital technology, which also provides options for flexible learning. The future of higher education can be summed up by the four learning models, which can be seen as four trends or modes:

1. With the university acting as a closed ecosystem that supports and mentors students while they pursue a course of study, the study program offers fundamental, thorough preparation for post-graduation employment. For those who enter college or a university straight out of high school, this plan works effectively.
2. The first-degree program provides a strong base of skills and knowledge. It can resemble a condensed study schedule. On top of this base, the curriculum is continuously developed by the student using fresh learning units. Several training companies make these extra blocks available.
3. At a college or university, the course of study is no longer completed as a little unit. Instead, it consists of separately merged modules from many training providers, all of varying sizes. Which learning phases or units the students choose to finish is up to them. The university is also accountable for officially acknowledging finished learning phases by issuing certificates or other forms of evidence.
4. As high school graduates, the students in this module do not go on to higher education. They already have individual identities and life experiences. Later in life, they enroll in college or university and incorporate their life experience into their studies. They require a flexible course of study that alternates between the advisers' and teachers' didactic control and their own autonomy. Institutional support, governance, and quality assurance are still up for debate. The suggested learning models will have a significant impact on how colleges and universities are run and what they do. These models can be used as a starting point to develop and generate ideas for the adoption of the models that will work best for each institution. Finally, technology is not the only foundation for innovation. Innovation is about using new technologies as conductors to help every single person reach their higher education goals more fully and successfully.

6. Discussion Students, instructors, and administrators must collaborate to support and evaluate the changes made in order to promote this digital revolution. Participatory culture must also be fostered. Financial limitations and the limitations imposed by the current IT infrastructure are two additional obstacles that higher educational institutes must overcome in order to make this shift. Higher Educational Institutes' access to IT infrastructure will also hinder their ability to fully embrace digital transformation, and certain investments will be required to improve these technological capabilities. Higher Educational Institutes are generally optimistic about this shift despite all of these difficulties. Technical degree programs are likely to see this change earliest since there is a high demand from companies, easy online skill certification for students, and an abundance of courses taught by academics at prestigious universities. Because many working adults looking to change careers lack the time or finances for full-time, residential programs, master's programs are likely to be affected before bachelor's programs. Technical master's degrees from private colleges, however, won't be the end of this shift. In the end, it will have an impact on almost every degree program and every level of the academy. What does that leave us with then? We must always evaluate how successfully we are helping our students as educators. What is our customer value proposition, to put it in the most direct commercial terms? When we consider this subject, we often become perplexed. Because of how solid our industry has been for so long, we've confused our model with our objective. There is no doubt about it: Our model is under danger. The use of technology will alter how we work, as we have seen in other sectors, and it will be painful. Even though these developments are alarming, we are confident that they will ultimately be a positive influence. What is the primary goal of higher learning? Now is the time to ask that question.

Conclusions

There were dramatic shifts in the main contributions and roles of community colleges and universities during the past centuries they have existed. Now, we could touch how close we are to being on the brink of another shift. The cost of higher education has grown enormously during the last fifty years. Alternatives including short courses, social media based courses, certificates, etc. have grown enormously during the last two decades. Even the guarantee of achieving better life due to college and universities has faded. Career academies during or after high school have sprouted in many communities as a cheaper, faster alternative. Few industries are starting to accept, even encourage eight weeks to three months certifications as a preferred

alternative. In this article, I have tried to answer three main questions, what will be the place of colleges and universities in the future? Should college and university faculty, staff, and students work to guide the shift, or should we just react to the changing situations? What will be the role of digital transformation in updating our reactions as faculty and students?

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