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THE IMPACT OF DIGITAL TRANSFORMATION ON EDUCATION

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RESEARCH ARTICLE

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Abstract

Digital transformation in education is becoming increasingly essential as the world moves towards a more technologically advanced future. Digital transformation in education, driven by technological advancements and the evolving demands of the global workforce. Digital transformation has become a global trend, reshaping traditional educational practices and offering opportunities for greater access to education and innovative teaching methods. The study examines the role of digital education in fostering inclusive, flexible, and personalized learning environments while addressing the challenges and obstacles encountered in its implementation. The paper investigates the advantages and disadvantages of digital education, focusing on how technology can enhance learning experiences and the associated risks that may arise from its widespread adoption. It further explores the positive and negative impacts of digital transformation on the educational sector. Additionally, the paper highlights the top six digital transformation trends in education, including the integration of artificial intelligence, virtual and augmented reality, mobile learning, cloud computing, gamification, and personalized learning. These trends are analysed in the context of their role in reshaping the educational landscape and the opportunities they present for educators and learners. The study also delves into the critical role of technology in digital learning, examining how it supports innovative approaches to education. Key obstacles to digital transformation in the education system are discussed. Particular attention is given to the challenges faced by higher education institutions in adopting digital transformation. The paper proposes potential solutions and strategies for overcoming these barriers, with a focus on the importance of a cohesive digital transformation strategy for higher education institutions. Ultimately, the study underscores the central role of higher education in driving digital transformation and shaping the future of education in a digital world.

Keywords: *Digital transformation, Global trend, Technology, Artificial intelligence, Higher education*

Introduction

Digital technology has sparked significant problems and quick modifications to today's society. Remote working and remote learning have become increasingly popular since the 2019 pandemic (COVID-19) altered our perceptions of where and how we work and study (Al Lily et al., 2020). Although many educational systems have previously embraced modern technologies and the revolutionary shift that comes with them across a wide range of sectors, including entertainment and mining, has surpassed the adoption of technological advancement in our educational systems. Modern civilization advanced to the next stage of technological progress. First came the invention of the steam engine; next came electrification; next, informatization; and last, digitalization. Digital instruments utilized in learning environments are growing and evolving in this manner as a result of the quickly evolving technology for communication and information (Parlak, 2017). To construct our system of education, which continues to be influenced by traditional thinking, in line with the conditions of today, it is required to cultivate this change, the age of technology, and their capacity to comprehend and adapt (Parlak, 2017). According to the definition, this digital revolution "significantly influences every aspect of human existence – from government services, education, healthcare, transportation, agriculture, manufacturing, energy, to the future of work". Even while instructional design, policy, and techniques in education have consistently been innovative, the rate of development brought about by digitization is profound and revolutionary. An essential component of innovative education is technology. Instructional paradigms are significantly impacted by new information communications technologies (ICT), including computers, electronic media, the printing press, and the internet. However, the speed at which technological advances are developing has sped up educational development and institutions, they are in a position to fundamentally alter learning at all stages in communities around the world. Once an amenity enjoyed by a small percentage of the population, higher learning is today more of a necessity for prosperity, taking care of one's family, and solving the most important problems facing the globe. While conventional schooling certainly has its position, we also need to

provide persons at all stages of life with opportunities for skills-based, continuous learning (Prasetyo, 2021). We need to recognize the speed at which innovation is evolving and the extent to which the traditional approach limits educational opportunities. Higher learning professionals agree that learning must be less structured and more flexible (Ahmad, 2019). They support additional classes, more streams, and a wider variety of certificates so that individuals can immediately put their newly acquired skills to use and educate as needed. A greater understanding of the capabilities that will be necessary going forward and how institutions are instructing learners for acquiring the abilities will assist all stakeholders in terms of enhanced instruction, and campus operations. Having this knowledge is crucial, particularly given how rapidly the working environment is evolving. Technology is the primary driver of this change (Alenezi, 2021). The speed at which technology is developing, institutions of higher learning are having trouble anticipating, planning, and strategizing for the variety of intended academic goals. They must be prepared to do all of this in order to carry out their responsibility as key players in helping pupils get ready for job opportunities in the future. Educational organizations will have to provide additional programs that heavily emphasize scientific, more advanced intellectual, knowledge-driven, and digital competencies at the expense of more incorporated, cooperative, interdisciplinary, and multilingual methods of instruction as a result of developments in technology. In addition, some claim that the interaction between pupils and educational organizations regarding educational requirements and demands is evolving due to technology. To improve adaptable, comprehensively and customized educational opportunities, it has encouraged the growth of alternative and interactive education.

As a means of improving productivity, fostering greater collaboration, and lowering expenses and mistakes in the administration of systems for learning and instruction at the local, regional, and national levels, schools, universities, and other learning institutions are becoming more conscious of the importance of digital transformation and its unrealized potential (Saracco, 2019). When it comes to leveraging the promise of emerging technology, education frequently follows the corporate sector. The use of online instructions and learning applications is growing and new innovations like interactive learning and ongoing professional skill enhancement have already brought about unprecedented improvements to a significant area of the educational system (Demartini, et al., 2020). Given the instructional, technical, and subject knowledge needed to tackle learners' settings and instructional fields, a teacher – or any other individual, for that matter – cannot become a professional in a couple of hours. Furthermore, a major factor in this procedure is the mindsets of educators regarding technologies. Digital technology and novel instruments, including generic interactive channels, can assist institutions streamline daily work, streamline internal operations, and enhance interaction between parents, teachers, and students. All actors' conduct and daily routines may alter as a result of these adjustments, which result in notable increases in productivity. They may also signify a significant departure from custom, enabling teachers to concentrate solely on students instead of the daily creation and administration of paperwork. Leadership should encourage and even urge on directing the organization's utilization of technological devices in all areas, from the digital registration to the libraries, and from social networking sites to educational settings. Higher institution's digital transformation is a necessary and impartial undertaking. To stimulate the innovative thinking of leaders, educators, and students, it is carried out in terms of organizational framework, administrative process, course material, and instructional techniques. In addition to creating an effective educational system that makes learning and absorbing information easier for students, the execution of digital transformation also fosters ideal circumstances for dissemination of knowledge, cultivates students' capacity for independent research without time or location constraints, and gives them access to scientific knowledge – all of which are made possible by the fourth industrial revolution, which presents a significant chance for global cooperation. Universities all throughout the globe have seen significant shifts in recent years, driven by cultural movements toward digitization and advancements in technology. Digital transformation necessitates extensive adjusting and re-adjusting, just like any other significant shift. Higher education has seen significant modifications as an outcome of the globalized economic system's strong effects on the socioeconomic education system, including improvements in effectiveness, standards, decentralization, and online and autonomous study. Collectively, these educational developments and factors support transnational learning. One potential strategy to bridge the enrollment gap is the execution of learning through digital means. This tendency is known as digital entrepreneurship (Rosen et al. 2020). Universities may no longer rely on conventional teaching methods to meet the demands of the globalization trend. The forthcoming blueprint to sustainability educational administration is validated by the digital change occurring in the worldwide educational industry.

Objectives

1. To explore the need for digital transformation in education.
2. To analyze digital education as a global trend.
3. To evaluate the advantages and disadvantages of digital education.
4. To examine the positive and negative impacts of digital transformation on education.
5. To identify the top 6 digital transformation trends in education.
6. To explore the role of technology in digital learning.
7. To investigate actions taken for digital transformation in education systems.

Methodology

This research report uses only secondary information as its foundation. The study uses an interpretive methodology, gathering and analyzing qualitative evidence through the documentation of publications, research papers from journals, documents

gathered by different authorities and institutions, papers appearing in local, national and worldwide publications and web-based resources.

Why is digital transformation in education needed

There is now more need for technological change within educational institutions as a result of the COVID-19 epidemic. Pupils in need of help due to impairments and educational challenges have been at risk of slipping far below. Educational results sometimes fall short of expectations or promises, according to the Organization for Economic Co-operation and Development's (OECD) 2019 study, regardless of inventiveness, including novel approaches to instruction and evaluation (Vincent-Lancrin et al., 2019). According to Wu et al. (2019), "further research is warranted for a fine-grained analysis of other sub-factors, such as infrastructure, educational atmosphere, approaches to planning, professional growth, and teacher ICT [Information Communication Technology] efficacy and ICT integration competence". According to the advocacy group Consortium for School Networking (CoSN), "many educational organizations do not have the flexibility, techniques, and perspectives to expand novel technological procedures from a few classes to numerous environments within educational institutions and school systems". They also suggest a methodical strategy that includes approaches to sustainability and scaling (Krueger, 2019). Technology needs to be incorporated into these plans as part of ongoing development. To meet the changing needs of pupils, teachers and international labour market, digital revolution in education is essential. As technology develops, incorporating digital resources into educational institutions improves availability, allowing for individualized learning and encouraging cooperation among people in different places. It makes instruction more effective and interesting by enabling the application of multimedia information, flexible learning systems, and immediate input. Additionally, by bringing materials to marginalized areas and chances for continuous instruction, digital transformation aids in closing the educational gap. In an age where technological proficiency is crucial, modernizing educational establishments guarantees that pupils have the abilities needed to prosper in a technologically advanced society. Educational institutions may improve students career readiness and establish more innovative, inclusively, and adaptable educational settings by adopting digital transformation.

Digital education as a global trend

The rapid advancement of ICT is referred to as "digitalization". With introduction of Internet in 1982, a digital universe is emerging that is connected to the actual world through novel links like social networks and online gaming. One of them claims that you might recognize the individual thanks to the interdependence of the actual and digital realms. The speed and extent of the technological advancement that has swept the planet are astounding. Similar worldwide technological shifts now happen every few months, whereas the shift from computing devices to personal computing devices took years. Digitalization was first restricted to the mechanization of technology, the proliferation of the World Wide Web, mobile communication, social media platforms, smartphones, and the increase in the number of customers utilizing technological advances. However, technological advances rapidly permeate an individual's political, cultural, and economic life. In several sectors of economic activity, the words "digital ecosystem", "digital environment", "digital community", and "digital economy" had been presented. At this point, learning has been impacted by digitization. Wikipedia defines "digitalization" as "a virtual technique for interactions, recording, and transmitting information using digital technologies". According to Marey, digitization represents a shift in the way people communicate and engage with one another as well as with community (Marey). A group of actions to change pedagogical procedures by integrating informational goods, tools, and technologies (IT) into instruction and learning are collectively referred to as "digital education".

The primary areas in which technology is used in schools are:

- creation of educational software for a range of uses;
- creation of instructional websites; the educational system's digital transformation;
- creation of instructional and methodological resources;
- control over actual items;
- planning and doing out computational experiments using virtualized models;
- retrieval of relevant data.

The job market, standards for learning, and the public's desire for new capabilities are all impacted by the digitization of education. It also focuses on restructuring the process of learning and reconsidering the duty of teachers. Education undergoes a drastic, substantial reorganization as a result of digitalization. The instructor needs to become proficient in using the newest technology and the nearly limitless amount of material available. Teachers must develop the skills essential to deal with, process, and integrate digital information into new technologies. As a result, digitalization changes the way individuals live their lives, makes it possible to learn new things and improve existing ones, and undoubtedly broadens perspectives.

Advantages and disadvantages of digital education

Without a question, one of the most efficient strategies to raise teaching standards is to digitize education. All educational institutions and learners seem to benefit greatly from digital learning. Therefore, digital education has several benefits, including:

Technologies provides a chance to gain immediate input and try out new pedagogical approaches.

Thanks to digital technology, teachers can develop novel training designs, techniques, and approaches, and students can participate more actively in the process of learning. For instance, a teacher can assess students' mastery of the content being

covered in class by administering an online survey at any point throughout the lecture. Alternatively, educators can adopt innovative approaches to structuring the learning process, such as the "flipped classroom", in which students are given the chance to study new material on their own at home before the instructor arranges for the practical application of that knowledge in the classroom. Thus, when students can utilize references to pertinent content or resources, the utilization of digital manuals makes the learning process more engaging. Students might research the issues posed, formulate a perspective, and then present and support it.

Learners are more likely to actively participate in the educational process when technologies are used.

All students, even those who are shy, lack confidence in their skills and typically lack determination, can be encouraged to participate in the learning process through the use of online questionnaires and digital resources. Regular feedback can be sent to online systems, including comments from students regarding the accessibility of coursework and training modules. By using data analysis, the teacher may swiftly and quickly determine each student's areas of difficulty, provide timely assistance, and determine areas in which kids can compete. This makes it simple to modify every student's or group's work.

For planning effective educational experiences for kids, there are a lot of materials available.

There are many of options available in mobile devices and digital textbook programs that drastically alter how training sessions are organized. In order to make learning process more engaging and attractive, certain digital tools employ various rewards and aid in the assimilation of information during the learning process. They also utilize competitive situations for the awarding of points and prizes. In role-playing games included in some e-books and mobile platforms, participants can provide information and proof in support of, say, historical characters or scientific ideas.

Many laborious tasks can be automated or made simpler for teachers with the use of technology.

Regular yet time-consuming chores like monitoring student attendance and academic achievement can be made simpler and faster with automation. Contemporary technologies make it easier to organize and choose personalized assignments for learners, monitor their engagement in class discussions, and more. Modern technology makes it easier to picture concepts that are hard to perceive and comprehend, which saves teachers both energy and time while explaining them.

Technology makes it possible to obtain data instantly and develops critical abilities for working with many sources.

The use of new technologies improves communications, fosters a more effective surrounding foe educating. Students can communicate with their teachers, collaborate on group assignments, and exchange ideas by joining online groups. For instance, learners can efficiently utilize the media features (working with sounds, pictures, etc.) as well as collaborating, organizing oneself, teamwork, other platform consequences with the help of the free community resource Scratch.

Technology proficiency is a vital skill for life and a significant form of education in today's society.

It takes more than just possessing "separate technological skills" to be considered digitally literate. Today, we're discussing a thorough comprehension of the digital world, which enables learners to co-create material with one another and adjust intuitively to new situations. Students can develop life talents during their studies that will benefit them throughout their lives, such as creating demonstrations, identifying trustworthy web sources, encouraging appropriate online conduct, etc. Digital literacy can assist educational institutions in making learning results consistently applicable while also enhancing the quality of instruction. As a result, instructors and students who take digital programs advance their knowledge and abilities in line with the most recent standards and technologies. Additionally, training materials may be updated quickly and efficiently with electronic courses.

There are risks associated with digital education in addition to its benefits. Thus, there are several drawbacks to online learning, including:

Decline in writing abilities and, consequently, in inventiveness.

An individual's coordination and motor capabilities will deteriorate if they lose their writing abilities. Areas of the brain that are involved in handwriting are in charge of speech development and sensory interpretation. Additionally, these portions are presented far less frequently for people who do not write by hand. Scientists at the Norwegian University of Stavanger came to the conclusion that those who write rapidly read better, while those who read slowly and find the text difficult to understand do not write effectively. Additionally, since practically every device and browser has auto-correction built in, pupils will learn less grammar, punctuation, and spelling. Thus, someone who is unable to write by hand is probably not going to be capable of writing properly. Students' imaginations will also be weak. Individuals who compose a text by hand have a clearer understanding of its subject matter.

Gadget addiction.

The term "gadget addiction" refers to a fixation with devices, the Internet, social media, and online gaming, as well as the misuse of these devices. Issues of focus are caused by gadget addiction. Pupils who struggle with this issue have trouble focusing or staying focused for extended periods of time; additionally possess issues with ability to remember things well and their decision-making skills are often worse than those of persons who are not addicted to gadgets.

A decrease in social skills.

The majority of students experience isolation and are unable to function without social media. The environment that shapes a person's character has a significant emotional impact. Internet communication is a kind of proxy or replacement for traditional forms of communication. Students who interact online will find it challenging to develop relationships with actual people rather than just virtual ones.

Adverse effect on health.

There is rising danger of health problems brought on using electronic devices, particularly among kids. This mostly affects vision and the possibility of myopia since children who use e-course books spend at least nine hours a week intensely staring at a computer screen. The foregoing issue is made worse by the hard-to-estimate amount of time spent in front of a computer at home. American research indicates that even "more than two hours a day is hazardous for children". This can cause memory loss, anxiety, depression, sleeplessness, and light-headedness. It has also been demonstrated that the light produced by computer screens has a detrimental effect on sleep quality. This results from a drop in melatonin levels, which control the biological rhythm of human existence. Moreover, poor posture in front of a computer and prolonged sitting are major causes of spine abnormalities, which are exacerbated by digital schooling.

Positive and negative impacts of digital transformation on education

Many facets of teaching, learning, and institutional management have been impacted by the fundamental alterations resulting from the digital revolution in education, which has both substantial advantages and noteworthy drawbacks.

Positive Impacts:

a) **Increased Access to Education**
By eliminating geographical and financial constraints, digital transformation enables education to be accessible to a worldwide audience. Accessibility to educational resources that might otherwise be unavailable to students is made possible by virtual classes and electronic learning platforms.

b) **Personalized Learning**
Digital platforms and technologies allow for individualized educational environments that are catered to each pupil's specifications and educational style. AI and machine learning are able to monitor pupil achievement and modify materials to improve learning outcomes.

c) **Enhanced Engagement and Interactivity**
Videos, simulations, and gamified learning experiences are examples of multimedia content that enhances the interactivity and engagement of classes. These resources enhance retention of information and keep learners interested.

d) **Collaboration and Communication**
No matter where they are, learners and educators can collaborate and communicate more effectively thanks to digital tools. A cooperative learning environment is promoted by resources including chat rooms, video conferencing, and shared internet areas.

e) **Access to Diverse Learning Resources**
A plethora of online materials, including as tutorials, research papers, and open-access courses, are made available by digital transformation. This gives pupils access to a multitude of knowledge to improve their education.

f) **Efficient Administration and Management**
Digital solutions can help schools and colleges save time and increase general effectiveness by streamlining administrative chores like time management, attendance, and assessment.

Negative Impacts

a) **Digital Divide**
Disparities in educational chances result from different learner's access to digital tools, the internet, and contemporary gadgets. Particularly in developing countries, the digital gap has the potential to worsen already-existing disparities.

b) **Over-reliance on Technology**
Students who rely too heavily on digital technologies may stop interacting with people in person. Additionally, it can hinder their ability to acquire more conventional abilities like writing, interacting with others, and critical thinking.

c) **Data Privacy and Security Issues**
Problems regarding data confidentiality and private data security are raised by the growing usage of digital technologies and internet-based platforms. Strict data protection procedures must be put in place by educational institutions to secure student data.

d) **Teacher Training and Adaptation**
Not every teacher is ready to use digital tools in the classroom. Teachers must continue their professional growth because of the transition to digital learning, and many will find it difficult to adjust to new platforms or technology.

e) Distraction and Reduced Focus
Students may become distracted by the internet, which could reduce their involvement and productivity. Applications for entertainment, gaming, and social media may take focus away from schoolwork.

f) Lack of Personal Connection
The emotional and social components of learning can be diminished by a digital transition that eliminates face-to-face encounters. Building relationships and providing emotional support in person is essential, as these can be more difficult to achieve in virtual settings.

Top 6 digital transformation trends in education

Transformational technologies extend besides the internet and include Virtual Reality (VR) / Augmented Reality (AR), Artificial Intelligence (AI), personalized learning, gamification, classroom set of devices and redesigned learning spaces among other emerging technologies (Newman, 2017).

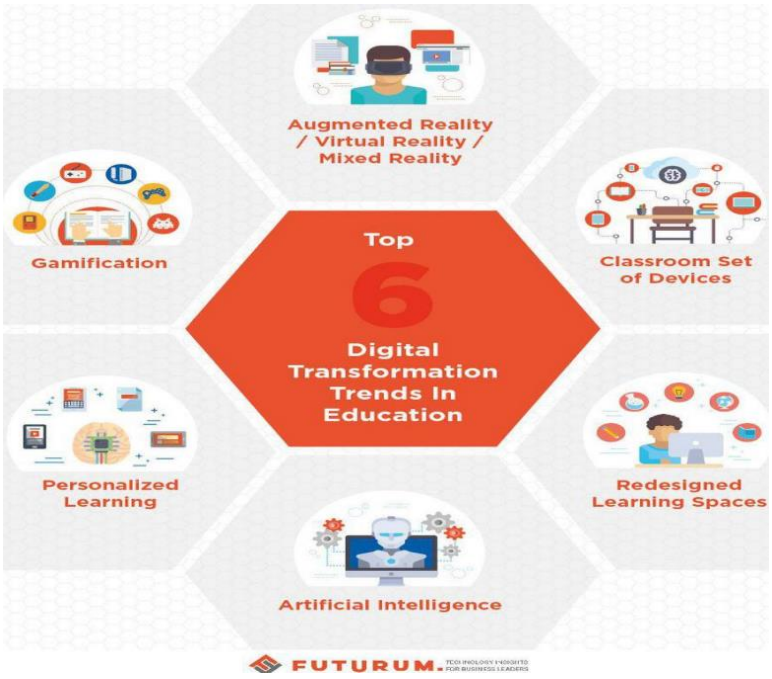

Figure 1: Top Digital Transformation Trends in Education (https://www.forbes.com)

a) Augmented Reality (AR) / Virtual Reality (VR)
Experiential learning is made possible by AR and VR. While VR immerses students in a virtual world, AR superimposes digital information on the physical world. Through lifelike simulations, these tools improve student engagement and facilitate their interaction with difficult ideas in disciplines like physics, history, and medicine.

b) Artificial Intelligence (AI)
In education, artificial intelligence (AI) employs algorithms to automate administrative processes, customize learning, and give students immediate feedback. AI adjusts to each student's preferred method of learning, allowing them to advance at their own speed while relieving teachers of their workload by automating repetitive chores like grading.

c) Gamification
To encourage pupils, gamification incorporates game-like features like leaderboards, badges, and points into instructional exercises. By promoting active participation and improving recall through interactive, game-inspired experiences, it makes learning more enjoyable and interesting.

d) Personalized Learning
With personalized learning, instructional materials are customized to each pupil's unique requirements, interests, and capabilities. With personalized materials and routes, it permits students to study at their preferred speed, improving learning outcomes and raising student engagement.

e) Classroom Set of Devices
Supplying personal gadgets for use in the classroom, such as computers, tablets, or cellphones, to instructors and learners. In addition to facilitating collaborative learning, interactive learning, and simple access to online information and tools, it guarantees fair access to digital resources.

f) Redesigned Learning Spaces
Redesigning actual classroom spaces to make them more adaptable, technologically enabled, and interactive. By giving students the chance to collaborate in many group environments, utilize technological resources and participate in practical projects more successfully, it promotes creativity, communication, and active learning.

The role of technology in digital learning

Technology is essential to digital learning because it makes learning more accessible, engaging, and personalized. Through platforms, it makes flexible remote learning possible, letting students' study at their own speed. While AI and data analytics provide individualized learning paths, interactive tools like virtual reality, gamification, and multimedia enhance the educational process. E-assessment systems offer prompt feedback, and digital communication tools promote teamwork. Nonetheless, issues including the requirement for instructor preparation, privacy concerns, and the digital gap must be resolved. Innovations like blockchain, 5G, and Artificial Intelligence (AI) are anticipated to further revolutionize digital learning as technology advances, increasing accessibility and effectiveness in education. However, in the past, this kind of technology has primarily taken place in educational settings, it is evident that it can now happen almost anywhere and at any time (Li, X.; Bergin, 2022), encouraging pupils as well as educators to assist the resurgence of digital transformation use in contemporary culture. People's lives, jobs, and enterprises are changing as a result of new technology, digitalization, and increased productivity. The job market in institutions and the digital transition face significant challenges due to the effects of technology improvements on institutions, society, and quality of life (Goulart, 2022). Due to the ongoing and continual growth of digital learning, some of the roles currently provided by faculty will alter or perhaps become obsolete. Numerous activities will undergo substantial changes, and many people will have to adapt to the demands of new talents, according to studies (Schwartz, 2018). Usually, well-defined activities grow increasingly complex and collaborative as digital technology substitutes more archaic working methods. In the new digital age, faculty members at institutes need to develop digital skills so that workers can adjust to evolving work and procedures (Kelchevskaya, 2020). Application and growth of abilities of organizations influence individual's ability to build connections or address challenging issues related to higher education, business, and creativity, with a focus on managing human resources. According to Erol & Yildirim, interdisciplinary mentorship is crucial for encouraging innovative problem-solving in a complex and ever-evolving environment, as the one connected to technological advances in the educational sector (Erol, Yildirim, 2016). Lack of necessary job readiness for graduates has been one of the main reasons of unemployment (Gimba, 2019). In order for faculty members to gain the professional and non-cognitive skills required for future employment, colleges and universities need to stay up with the pace of technology innovation. Without these abilities, jobs will be difficult to find. Educational establishments should be innovative in their teaching and learning practices in order to successfully meet the skill demands of the rapidly changing technological labour market (Ilori, 2020).

Digital transformation actions

Without any doubt, e-learning, the numerous online courses that have been introduced, and "one-to-one computing" are innovations that have a significant systematic impact. But we can't overlook the huge advantages of digital transformation for services that support administration framework as a whole. The following four digital transformation initiatives have noteworthy, consistent effects:

a) Eliminating paper
Paper processes are used by all organizations, not only educational ones. Many sections as well as administration handle a significant volume of paper used by schools and universities. The first and most straightforward phase in the digital transformation process is well known, the removal of paper, which has many benefits and produces amazing new digital experiences for all participants.

b) Automating processes and operations
educational establishments which refuse to accept digital transition undoubtedly will lag behind in the years to come, given how quickly technology is affecting businesses of all sizes across all administrative sectors. The current education system is under tremendous pressure due to high expenses and limited budgets; therefore, it must make investments in operational proficiency to contend in a setting that has previously changed over time, encouraging extensive digitization of processes.

c) Using mobile devices
For "millennials", cellphones are the preferred platform. Mobile phones can be used to find book, and order food, cabs, homes, help services, and specialists for household tasks. The most common tool for change that the Internet revolution has helped and encouraged is the mobile phone.

d) Using the cloud
A crucial component of the technique of digital transformation, the cloud establishes the groundwork for the digital era in any company. Cloud-based procedures are crucial for facilitating speed and mobility as well as closing the skills gap. Agile, efficient, resilient, and cost-optimizing solutions that are safe, scalable, and reliable are result of years of experience and substantial investments made by cloud service providers.

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References

1. Ahmad, T., (2019). Scenario based approach to re-imagining future of higher education which prepares students for the future of work. High. *Higher Education Skills and Work-based Learning ahead-of-print*, 10, 217-238.DOI:10.1108/HESWBL-12-2018-0136
2. Al Lily, A. E., Ismail, A. F., Abunasser, F. M., & Alhajhoj Alqahtani, R. H. (2020). Distance education as a response to pandemics: Coronavirus and Arab culture. *Technology in Society, 63,* 101317. https://doi.org/10.1016/j.techsoc.2020.101317.
3. Alenezi, M., (2021). Deep dive into digital transformation in higher education institutions. *Educ. Science, 11,* 770. https://eric.ed.gov/?id=EJ1323139
4. Demartini, C. G., Benussi, L., Gatteschi, V., & Renga, F. (2020). Education and digital transformation: The riconnessioni project. *IEEE Access, 8,* 186233-186256. DOI:10.1109/ACCESS.2020.3018189
5. Erol, M.; Yıldırım, (2016) The development of higher education life satisfaction scale. *Egitimde Kuram Uygul, 12,* 221–243. https://dergipark.org.tr/en/pub/eku/issue/26699/280887
6. Gimba Dogara, M.S.B.S.; Kamin, Y.B.; bin Abd Hamid, M.Z.; bin Nordin, M.S., (2019) Developing soft skills through project-based learning in technical and vocational institutions. *International Journal of Recent Technology and Engineering (IJRTE) 8*(3):5872-5877. DOI:10.35940/ijrte.A9803.098319
7. Goulart, V.G.; Liboni, L.B.; Cezarino, L.O. Balancing skills in the digital transformation era: The future of jobs and the role of higher education. *Industry and Higher Education 36*(4):095042222110297. DOI:10.1177/09504222211029796
8. Ilori, M.O.; Ajagunna, I. Re-imagining the future of education in the era of the fourth industrial revolution. Worldw. Hosp. Tour. Themes 2020, 12, 3–12.
9. Kelchevskaya, N.; Shirinkina, E., (2020) Institutional Model of Drivers of Digital Development of Human Capital in the Strategic Perspective. In Proceedings of the 2nd International Scientific and Practical Conference "Modern Management Trends and the Digital Economy: From Regional Development to Global Economic Growth" (MTDE 2020), Yekaterinburg, Russia, 16–17 April 2020; pp. 499–503. DOI:10.2991/aebmr.k.200502.082
10. Krueger, K. R. (2019). Driving K-12 innovation: Hurdles 2019. Consortium for School Networking https://cosn.org/driving-k-12-innovation 2019-hurdles.
11. Li, X.; Bergin, C.; Olsen, A.A., (2022). Positive teacher-student relationships may lead to better teaching. Learn. Instr. 2022, 80, 101581.
12. Newman, D. (2017). The top six transformational trends in education, Forbes, (July) https://www.forbes.com/sites/danielnewman/2017/07/18/top-6-digitaltransformation-trends-in-education/#6912114e.
13. Parlak, B. (2017). Dijital çağda eğitim: Olanaklar ve uygulamalar üzerine bir analiz. Education in Digital Age: An analysis on opportunities and practices, Süleyman Demirel University, Journal of Faculty of Economics and Administrative Sciences, 22(15), 1741-1759. https://dergipark.org.tr/en/pub/sduiibfd/issue/53208/708302
14. Prasetyo, I.; Suryono, Y.; Gupta, S. (2021) The 21st century life skills-based education implementation at the non-formal education institution. *Journal of Nonformal Education, 7,* 1–7. https://journal.unnes.ac.id/nju/jone/article/view/26385
15. Saracco, R., (2019). Digital Transformation vs Continuous Education. IEEE Future Directions. Accessed: Nov. 19, 2019. [Online]. Available: https://cmte.ieee.org/futuredirections/2019/03/07/digital-transformation vs-continuous-education/
16. Rosen, A. F., Proksch, D., Stubner, S., & Pinkwart, A. (2020). Digital new ventures: Assessing the benefits of digitalization in entrepreneurship. *Journal of Small Business Strategy, 30*(2), 59–71. https://jsbs.scholasticahq.com/article/26335-digital-new-ventures-assessing-the-benefits-of-digitalization-in-entrepreneurship/attachment/66533.pdf
17. Schwartz, S.E.; Kanchewa, S.S.; Rhodes, J.E.; Gowdy, G.; Stark, A.M.; Horn, J.P.; Parnes, M.; Spencer, R. (2018) I'm having a little struggle with this, can you help me out? Examining impacts and processes of a social capital intervention for first-generation college students. *American Journal of Community Psychology 61*(1-2). DOI:10.1002/ajcp.12206
18. Vincent-Lancrin, S., Urgel, J., Soumyajit Kar, K., & Jacotin, G. (2019). Measuring Innovation in education 2019: What has Changed in the classroom? *Educational research and innovation. Paris: OECD Publishing.* https://doi.org/10.1787/9789264311671- en
19. Wu, B., Yu, X., & Hu, Y. (2019). How does principal e-leadership affect ICT transformation across different school stages in K-12 education: Perspectives from teachers in shanghai. *British Journal of Educational Technology, 50*(3), 1210–1225. https://doi.org/10.1111/bjet.12766.