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THE ROLE OF EDUCATIONAL TRANSFORMATION IN THE DIGITAL ERA IN IMPROVING STUDENT QUALITY

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Abstract

This study illustrates how educational transformation in the digital era plays a significant role in improving the quality of students. Through the utilization of various platforms and digital tools, education becomes more innovative and dynamic. Adaptive learning processes enable the development of skills in line with the needs of the modern job market. The aim of this research is to describe the role of educational transformation in the digital era in enhancing the quality of students. The research employs a qualitative approach with interview, observation, and documentation methods to obtain relevant data related to the research on the role of educational transformation in the digital era in improving the quality of students. The research is conducted in the Accounting Education Program at Muhammadiyah University of Surakarta with three lecturers and three students as informants. Data obtained from informants is further processed using the triangulation technique, involving different sources of data and methods. The steps of data analysis include merging, sampling, recording, data reduction, and drawing conclusions. The research findings indicate that the transformation provides significant opportunities to enrich students' learning experiences. However, challenges such as variations in technology understanding among lecturers and the need for the development of digital competencies in students must be addressed. Strong institutional support, including providing training for lecturers and adequate infrastructure on campus, is acknowledged as key to the successful implementation of these changes. This transformation not only contributes to the improvement of student quality but also encourages collective efforts in overcoming emerging obstacles.
Keywords: Educational Transformation, Digital Learning, Student Quality

Abstrak

Studi ini menggambarkan bagaimana transformasi pendidikan di era digital berperan penting dalam meningkatkan kualitas peserta didik. Melalui pemanfaatan berbagai platform dan perangkat digital, pendidikan menjadi lebih inovatif dan dinamis. Proses pembelajaran adaptif memungkinkan pengembangan keterampilan sejalan dengan kebutuhan pasar kerja modern. Penelitian ini bertujuan untuk mendeskripsikan peran transformasi pendidikan di era digital dalam meningkatkan kualitas peserta didik. Penelitian ini menggunakan pendekatan kualitatif dengan metode wawancara, observasi, dan dokumentasi untuk memperoleh data yang relevan terkait penelitian tentang peran transformasi pendidikan di era digital dalam meningkatkan kualitas peserta didik. Penelitian dilakukan di Program Pendidikan Akuntansi Universitas Muhammadiyah Surakarta dengan tiga orang dosen dan tiga orang mahasiswa sebagai informan. Data yang diperoleh dari informan diolah lebih lanjut dengan menggunakan teknik triangulasi dengan melibatkan berbagai sumber data dan metode. Langkah-langkah analisis data meliputi penggabungan, pengambilan sampel, pencatatan, reduksi data, dan penarikan kesimpulan. Temuan penelitian menunjukkan bahwa transformasi memberikan peluang yang signifikan untuk memperkaya pengalaman belajar siswa. Namun tantangan seperti variasi pemahaman teknologi di kalangan dosen dan perlunya pengembangan kompetensi digital pada mahasiswa harus diatasi. Dukungan kelembagaan yang kuat, termasuk memberikan pelatihan bagi para dosen dan infrastruktur yang memadai di kampus, diakui sebagai kunci keberhasilan implementasi

perubahan tersebut. Transformasi ini tidak hanya berkontribusi terhadap peningkatan kualitas mahasiswa namun juga mendorong upaya kolektif dalam mengatasi hambatan-hambatan yang muncul.
Kata Kunci: Transformasi Pendidikan, Pembelajaran Digital, Kualitas Siswa

INTRODUCTION

The transformation of education in the digital era has become crucial to meet the demands of an increasingly connected modern society. With advancing technology, it is expected that the learning experience becomes more interactive and personalized, enabling students to access educational resources more widely and encouraging them to develop skills relevant to the demands of the workforce. Digital transformation is a process that involves examining the needs and desires of stakeholders and ensuring that educational and research offerings align with students' knowledge needs, where digital transformation is now progressively introduced in educational institutions worldwide. Digital transformation is an adjustment process where digital advancements replace traditional methods to achieve greater productivity and better outcomes. Impact-wise, digitization will have a significant impact on our daily lives. Universities have the goal of educating their students, and digital transformation can assist them in achieving this objective. This is to create a generation of students who are better prepared to face future challenges and contribute valuable insights to society and the country's development. Education is currently undergoing transformative changes with the development of technology, tools, and platforms aimed at enriching the learning experience and improving the quality of students. Education is defined as the entire knowledge and learning that occurs throughout life in all places and situations that positively influence the growth of every individual.[1] Learning media serves as a source of learning or a facility that takes the form of physical materials containing instructional content in the educational environment, supporting a teaching and learning process to stimulate learners.[2] With the use of digital tools and resources in the classroom, more teachers are becoming aware of the importance of technology.[3] This research aims to demonstrate that the role of educational transformation in the digital era will bring about positive changes in enhancing the quality of students.

[1] Desi Pristiwanti et al., "Pengertian Pendidikan," *Jurnal Pendidikan Dan Konseling (JPDK)* 4, no. 6 (December 2, 2022), https://doi.org/10.31004/jpdk.v4i6.9498.

[2] Mayangsari Nikmatur Rahmi and M.Agus Samsudi, "Pemanfaatan Media Pembelajaran Berbasis Teknologi Sesuai Dengan Karakteristik Gaya Belajar," *Edumaspul: Jurnal Pendidikan* 4, no. 2 (October 30, 2020), https://doi.org/10.33487/edumaspul.v4i2.439.

[3] Ardian Sopa et al., "Hard Skills versus Soft Skills: Which Are More Important for Indonesian Employees Innovation Capability," *International Journal of Control and Automation* 13, no. 2 (April 2, 2020).

In accordance with Republic of Indonesia Law Number 20 of 2003 regarding the National Education System, Chapter II Article (3) states that national education functions to develop the capabilities and shape a dignified nation's character and civilization in order to explore the life of the nation. The objective is to cultivate the potential of learners to become individuals who are faithful and devoted to the Almighty, possess noble character, are healthy, knowledgeable, skillful, creative, independent, and outstanding. Current research has established a connection between the impact of digital technology transformation and the phenomenon of digital transformation. The role of education becomes highly influential in shaping the development of education in the digital era. The new technology and approaches that integrate the physical, digital, and biological worlds will fundamentally change the lifestyle and interactions of humans.[4,5] Automation in almost every field, including technological advancements, has enabled transformation in education, thus impacting the way we learn and teach.[6] Digital technology shapes knowledge and often becomes the subject of teaching and learning itself.[7] As a result, every facet of the education system has undergone qualitative changes, encompassing alterations in the content of education, the planned assessment system of learning outcomes, the skills of academic teaching staff, and the educational environment. Digitalization transcends the mere use of technological solutions; instead, it can be recognized as the alignment of three factors: digital technology, humans, and organizational elements.

Digital transformation has emerged as a key objective for educational institutions, particularly in higher education, in recent years. This study ultimately concludes that the issues mentioned, specifically the ongoing transformation of the world largely due to digital development and diversification, are influencing a parallel transformation in higher education. This situation compels universities to undergo digital transformation across all dimensions.[8] Consequently, numerous researchers have sought to explore optimal ways to implement digital transformation approaches in higher education. In doing so, they aim to elucidate the intricate relationship among various stakeholders involved in the education domain, supported by advanced technology. Academic findings suggest that novice teachers adapt more easily to rapid changes and

[4] Nanda Putri Amelia, Intan Sabila, and Masduki Asbari, "Pancasila as a Paradigm of Science and Technology," *Journal of Information Systems and Management (JISMA)* 1, no. 2 (May 1, 2022), https://doi.org/10.4444/jisma.v1i2.8.

[5] Falih Suaedi and Dimas Agung Trisliatanto, "The Constructionalisation of Intellectual Capital Based on the Industrial Revolution 4.0: A Meta-Analysis," *International Journal of Innovation, Creativity and Change* 13, no. 3 (2020).

[6] Katharina Dengler and Britta Matthes, "The Impacts of Digital Transformation on the Labour Market: Substitution Potentials of Occupations in Germany," *Technological Forecasting and Social Change* 137 (December 1, 2018), https://doi.org/10.1016/j.techfore.2018.09.024.

[7] Dirk Ifenthaler, David Gibson, and Eva Dobozy, "Informing Learning Design through Analytics: Applying Network Graph Analysis," *Australasian Journal of Educational Technology* 34, no. 2 (April 27, 2018), https://doi.org/10.14742/ajet.3767.

[8] Lina María Castro Benavides et al., "Digital Transformation in Higher Education Institutions: A Systematic Literature Review," *Sensors* 20, no. 11 (January 2020), https://doi.org/10.3390/s20113291.

developments compared to their experienced counterparts.[9] Experienced teachers have indicated that a lack of digital skills hampers their ability to incorporate educational technology in their classrooms; other issues raised include systemic problems, such as technology inaccessibility and workload.[10,11,12] In Indonesia, technology facilities seem to be a common issue hindering teachers from integrating and maximizing the potential of technology in their teaching practices.[13,14] Other researchers also focus on the implications of digital technology on workforce competencies by exploring the digital skills of educators. Finally, others concentrate on the use of digital technology to enhance teaching methods. Additional issues are related to the lack of teacher training in using technology for teaching purposes, as highlighted by some previous researchers.[15] Digitalization in higher education helps monitor training barriers easily and reduces risks in universities.

In general, digital technology and online resources now permeate all aspects of teaching and learning. Changes in higher education promote innovation in pedagogy and teacher training. By leveraging advancements in digital technology for learning, educators and learners can effectively use games to enhance the educational process, a method proven to be quite effective.[16] In this era, social media can serve as an effective learning tool.[17] Another negative aspect of relying on technology in education is the issue related to teachers' lack of preparedness to transition from face-to-face learning to online delivery mode,[18] and time constraints in preparing learning materials

[9] Claire Englund, Anders D. Olofsson, and Linda Price, "Teaching with Technology in Higher Education: Understanding Conceptual Change and Development in Practice," November 1, 2017.

[10] Päivikki Jääskelä, Päivi Häkkinen, and Helena Rasku-Puttonen, "Teacher Beliefs Regarding Learning, Pedagogy, and the Use of Technology in Higher Education," *Journal of Research on Technology in Education* 49, no. 3–4 (October 2, 2017), https://doi.org/10.1080/15391523.2017.1343691.

[11] Mamoona Majid et al., "Applications of Wireless Sensor Networks and Internet of Things Frameworks in the Industry Revolution 4.0: A Systematic Literature Review," *Sensors* 22, no. 6 (March 8, 2022), https://doi.org/10.3390/s22062087.

[12] Carlos Marcelo and Carmen Yot-Domínguez, "From Chalk to Keyboard in Higher Education Classrooms: Changes and Coherence When Integrating Technological Knowledge into Pedagogical Content Knowledge," *Journal of Further and Higher Education* 43, no. 7 (August 9, 2019), https://doi.org/10.1080/0309877X.2018.1429584.

[13] Umar Fauzan and Luluk Humairo Pimada, "ICT-Based Teaching of English at Madrasah Aliyah in Kalimantan," *TARBIYA: Journal of Education in Muslim Society* 5, no. 2 (December 26, 2018), https://doi.org/10.15408/tjems.v5i2.10414.

[14] Gusti Nur Hafifah and Gunadi Harry Sulistyo, "Teachers' ICT Literacy and ICT Integration in ELT in the Indonesian Higher Education Setting," *Turkish Online Journal of Distance Education*, July 1, 2020, https://doi.org/10.17718/tojde.762050.

[15] Eddy Haryanto, "ICT in Indonesian Public Secondary Schools: EFL Teachers' Attitude and Problems," *Edukasi: Jurnal Pendidikan Dan Pengajaran*, June 5, 2021, https://doi.org/10.19109/ejpp.v8i1.8170.

[16] Stefano Perini et al., "Learning and Motivational Effects of Digital Game-Based Learning (DGBL) for Manufacturing Education –The Life Cycle Assessment (LCA) Game," *Computers in Industry* 102 (November 2018), https://doi.org/10.1016/j.compind.2018.08.005.

[17] Helen Boholano, "Smart Social Networking: 21st Century Teaching and Learning Skills," *Research in Pedagogy* 7, no. 2 (2017), https://doi.org/10.17810/2015.45.

[18] Mupid Hidayat et al., "Character Education in Indonesia: How Is It Internalized and Implemented in Virtual Learning?," *Jurnal Cakrawala Pendidikan* 41, no. 1 (2022), https://doi.org/10.21831/cp.v41i1.45920.

with technology.[19] The use of technology may encounter various technical difficulties that impede and slow down the teaching-learning process.[20] According to Hakim, information technology plays a crucial role in lectures, especially in completing students' assignments. The significant gap between developed and developing countries is evident in school infrastructure.[21] Schools in developed countries are equipped with various technological devices, including PCs, laptops, tablets, projectors, and internet access. In contrast, schools in developing countries often lack access to these devices. In previous research by Zinger, Tate, Warschauer, it was stated that the technological context in some settings and the impact of socio-cultural factors on technology use and the implementation of technological pedagogy are constraints faced by online teachers, identifying characteristics that support or hinder learning provided by lecturers.[22] In the study by Pongskdi, it is explained that the challenges faced by lecturers to enhance digital technology skills show high confidence, and lecturers with low confidence encounter difficulties in using digital technology. The research concludes that the cultural history of each academic institution influences the utilization of digital technology.

The transformation of education in the digital era has posed significant challenges. Within the university environment, these challenges have noticeably affected both professors and students. Addressing issues in the digital era's transformation of education at universities necessitates various crucial measures. Firstly, it is vital to ensure more equitable access to educational technology, particularly for less privileged students. Assistance programs for devices and internet access can help mitigate inequalities in access. Additionally, providing technology training for professors is essential. They require training in utilizing technology and developing online skills to effectively facilitate learning. Creating an inclusive educational environment that focuses on the individual needs of students is also crucial. The modern education system must undergo digital transformation; otherwise, it will fail to meet market demands. By implementing these solutions, the impact of the digital era's transformation of education on professors and students at universities can become more positive. Professors will be better prepared and capable of harnessing the potential of technology to enhance learning, while students will experience a more inclusive and adaptive education, enabling them to thrive in the ever-changing digital world. The transition to a digital education institution

[19] Mohammed Nasser Hassan Ja'ashan, "The Challenges and Prospects of Using E-Learning among EFL Students in Bisha University," *Arab World English Journal* 11, no. 1 (March 15, 2020), https://doi.org/10.24093/awej/vol11no1.11.

[20] Thomas Favale et al., "Campus Traffic and E-Learning during COVID-19 Pandemic," *Computer Networks* 176 (July 2020), https://doi.org/10.1016/j.comnet.2020.107290.

[21] Arif Rahman Hakim et al., "The Effectiveness of Digital Literature-Based Learning Video on Improving Student's Digital Literature Skill," *Jurnal Pendidikan Ilmu Sosial* 33, no. 1 (June 20, 2023), https://doi.org/10.23917/jpis.v33i1.21782.

[22] D. Zinger, T. Tate, and M. Warschauer, *Learning and Teaching with Technology: Technological Pedagogy and Teacher Practice* (New York: The SAGE handbook of research on teacher education, 2017).

involves the use of flexible processes, considering the establishment of an adaptive corporate culture and the optimization of educational and social processes. The success of educational digitization depends on ensuring that the education process, based on the application of information and communication technology, is targeted to specific users, has specific content, is grounded in correct methodologies and approaches, has engaging content, encourages good student motivation, and has clearly defined software and technical infrastructure.

The objective of this research is to comprehend the extent to which changes and innovations in digital education can influence and enhance the quality of students. It aims to assess the impacts brought about by the transformation of education in the digital era and identify and analyze potential barriers faced by educational institutions, professors, and students when adopting digital educational technology. This study presents the impacts of the role of educational transformation in the digital era and the influence of digital educational transformation on improving the quality of students. The hope is that through this research, shortcomings and issues arising in the transformation of education in the digital era can be thoroughly evaluated for improvement. Consequently, this study becomes imperative as a focal point of attention for institutions, professors, and students, ensuring that the transformation of education in the digital era is not only beneficial but also progressive. Urgent consideration of this study is crucial so that the transformation of education in the digital era can be both useful and advantageous for the advancement of education. With the continuous development of technology, it is anticipated that this research will exert influence on the field of education, propelling it further and enhancing the quality of students during the transformation of education in the digital era.

RESEARCH METHODS

This research was conducted in the Accounting Education program at Muhammadiyah University of Surakarta using a qualitative descriptive method. The qualitative descriptive research approach is employed to explain existing research without manipulating the variables' data, studying through direct interviews.[23] Additionally, in-depth interviews were carried out to explore the dimensions of accessibility actualization.[24] This study utilizes qualitative descriptive methods to comprehensively understand the experiences, perceptions, and impacts of the transformation on students, educators, and the education system as a whole. The research data were collected to determine the impact of the transformation of education in the digital era on improving the quality

[23] Syamsul Bahri, "Pengembangan Kurikulum Dasar Dan Tujuannya," *Jurnal Ilmiah Islam Futura* 11, no. 1 (February 3, 2017), https://doi.org/10.22373/jiif.v11i1.61.

[24] Marcello M. Mariani and Satish Nambisan, "Innovation Analytics and Digital Innovation Experimentation: The Rise of Research-Driven Online Review Platforms," *Technological Forecasting and Social Change* 172 (November 2021), https://doi.org/10.1016/j.techfore.2021.121009.

of students. In this case, the research investigates the impact of digital-era education on professors and students during the learning process, understanding how to master digital-based education, and utilizing digital education. Data collection techniques include interviews, observations, and documentation. In conducting interviews, the researcher chose to select sources from both professors and students to obtain relevant data in researching the role of educational transformation in the digital era in improving the quality of students.

The interview results provide valuable insights into the practical challenges and opportunities in implementing digital solutions in the Accounting Education program at Muhammadiyah University of Surakarta, as well as potential barriers to its implementation. The interviewed subjects include three accounting education professors serving as program managers and three accounting education students affected by the transformation of digital education. Interviews were recorded, transcribed, and qualitatively analyzed through content analysis. This research also employs the triangulation technique, including method triangulation and data source triangulation. Method triangulation is used to compare data obtained from interview analysis or content analysis of documents to understand individuals' views and experiences related to educational transformation. Data source triangulation is performed using data obtained through interviews with professors and students within the research context regarding the role of educational transformation in the digital era in improving the quality of students. The data analysis steps in this study include consolidating, sampling, noting or coding, reducing or simplifying data, and drawing conclusions.

RESULTS AND DISCUSSION

A. Result

Based on the interview results and data analysis, here are some transformations in education in the digital era within the Accounting Education Program at Muhammadiyah University Surakarta:

1. Technology-Based Learning Innovation

In 2020, the field of education experienced a transformation in the delivery of learning systems due to the impact of Covid-19. This resulted in an educational shift where traditional face-to-face learning transitioned to online or e-learning. In the Accounting Education Program at Muhammadiyah University Surakarta, opportunities were presented for both lecturers and students to participate in technology-based learning through the utilization of open learning. From the insights gathered through interviews, it was elucidated that lecturers use open learning as a tool for teaching and interacting with students. Within the open learning platform, various features are available to manage assignments, materials, and learning videos provided by lecturers. Students can

access these resources to enhance their technological skills and adapt to learning systems based on technology. In addition to open learning, various other technology-based learning platforms, such as Schoology, Zoom, Google Meet, and Spada, are utilized. The innovation in technology-based learning brings about impacts, including providing flexibility in education and enhancing students' proficiency in integrating technology into their studies.

2. Development of Digital Skills

The acquisition of digital skills has become imperative in navigating the current information technology era, requiring individuals to master various software, online platforms, and cutting-edge technologies for effective and productive engagement in various aspects of life. In the interview findings, a positive impact on the transformation of education in the digital era was discerned, particularly concerning the development of digital skills. Both lecturers and students have witnessed advancements in their learning experiences, necessitating them to adapt their capabilities to incorporate technology in education to remain current. Within the Accounting Education Program at Muhammadiyah University Surakarta, there are technology-based courses such as Data Processing Techniques and Accounting Learning Media Practices. These courses are designed to equip students with the necessary skills to navigate technology and prepare for the workforce. Furthermore, smart classrooms equipped with technology-enhanced learning tools are available for both lecturers and students in the Accounting Education Program.

3. Impact of Digital Education Transformation

After conducting analysis and interviews, various impacts on lecturers and students within the Accounting Education Program at Muhammadiyah University Surakarta have been identified. These impacts are detailed as follows:

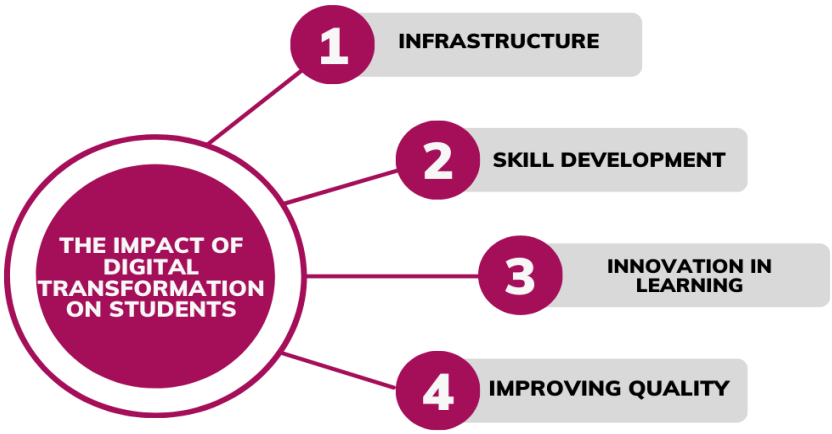

Figure 1. Impact of digital education transformation from students perspective

Based on interview results with students, there are significant impacts experienced by the students, which are described as follows:

a. Infrastructure

   In this context, infrastructure emerges as a crucial factor in the development of education in the digital era, as it can facilitate students' learning and enhance their skills. Therefore, the Accounting Education Program at Muhammadiyah University Surakarta has implemented significant changes in infrastructure. This includes the introduction of smart classrooms and the upgrading of computer laboratories, software, and internet networks within the scope of the accounting education program.

b. Skill Development

   Based on the interview results, students in the Accounting Education Program at Muhammadiyah University Surakarta are equipped to prepare for their future by honing skills through technology-based courses such as data processing techniques, accounting learning media practices, and digital marketing. In these courses, students learn to use technology like computers, laptops, and open learning applications.

c. Innovation in Learning

   Innovation in learning entails offering students novel learning experiences to broaden their perspectives. For instance, technology-based learning enables students to engage with courses while utilizing technology, fostering a positive impact on learning and empowering them to incorporate technology in education.

d. Improving Quality

   From the interview findings, there is a discourse on the enhancement of student quality. The Accounting Education Program at Muhammadiyah University Surakarta elevates the caliber of its students by upgrading infrastructure, adopting innovative teaching methods, and encouraging participation in the MBKM program organized by the Ministry of Education and Culture.

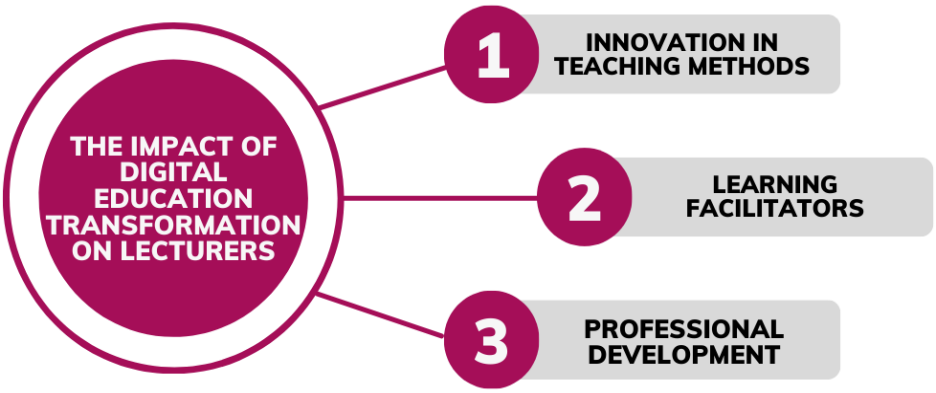

Figure 2. Impact of digital education transformation from lecturers perspective

In the interview results with lecturers, it can be illustrated that there are significant impacts experienced by the lecturers, namely:

a. Innovation in Teaching Methods

   In the Accounting Education Program at Muhammadiyah University Surakarta, the teaching methods undergo innovation, incorporating collaborative learning, technology-based learning, and online learning. In this learning process, lecturers impart the skills required for students to prepare themselves for the next level. The innovation in teaching methods allows students to practice skills and acquire knowledge through novel approaches.

b. Learning Facilitators

   Lecturers can become effective learning facilitators by harnessing digital technology. They can leverage various online learning platforms, digital resources, and interactive tools to enhance student engagement. In the scope of the Accounting Education Program at Muhammadiyah University Surakarta, instructors provide technology-based learning, such as data processing techniques and accounting learning media practices, to enhance students' skills and understanding of technology. Instructors also deliver lessons through online learning platforms, such as open learning, Zoom, and Spada.

c. Professional Development

   In the interview results, it is explained that one of the impacts of digital education transformation is the development of skills and abilities in lecturers to uphold professionalism in their work. Lecturers need to continually develop themselves because the transformation of education affects their working systems. Lecturers who encounter challenges in adapting to educational transformation must make adjustments to ensure the maintenance of professionalism in their work.

4. Constraint

From the interview results obtained, there are several challenges experienced by lecturers and students in the transformation of education in the digital era, namely:

a. Unprepared Infrastructure:

The lack of readiness in infrastructure for learning creates a serious challenge in providing an optimal learning experience for students. Insufficient facilities such as adequate classrooms, modern learning equipment, and accessibility to technology can hinder the learning process. The impact can be felt by both teachers and students, who may struggle to understand the material deeply or develop skills relevant to the demands of the times. In learning, this can lead to disruptions in the continuity of learning, causing technology-based learning to be disrupted and rendering it ineffective. For example, a presentation using PowerPoint may encounter issues like HDMI cable errors resulting in no display, and poor internet connectivity while accessing open learning can lead to applications being inaccessible.

b. Adaptation Difficulties:

In the development of educational transformation in the digital era, the Accounting Education Program at Muhammadiyah University Surakarta has encountered several challenges in adapting to technology-based education, such as implementing open learning. Both lecturers and students still face obstacles when using the application, requiring extra effort to learn how to use it. Socialization is gradually conducted to facilitate a better understanding for both lecturers and students.

B. Discussion

The evolution of education in the digital era, coupled with globalization, has swiftly impacted the structure of almost every field, thanks to advancements and changes in information and communication technology. This rapid progress in information and communication technology has also resulted in notable improvements and alterations in the utilization of digital devices within the realm of education.[25] The development of education nurtures specific capabilities that can augment an individual's performance and career prospects, fostering confidence to navigate a critically-oriented environment and producing graduates who are poised to be competitive in the future economy.[26] In its development, digital transformation in education cannot be avoided as a

[25] Bekir Parlak, "Dijital çağda eğitim: Olanaklar ve uygulamalar üzerine bir analiz," *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi* 22, no. Kayfor 15 Özel Sayısı (December 30, 2017).

[26] Suranto Suranto and Famila Rusdianti, "Pengalaman Berorganisasi Dalam Membentuk Soft Skill Mahasiswa," *Jurnal Pendidikan Ilmu Sosial* 28, no. 1 (September 7, 2018), https://doi.org/10.2317/jpis.v28i1.6772.

result of the increasing use of technology in daily life.[27] It is essential to emphasize how changes and transformations must take place in this context, making it appropriate for educators, students, and the curriculum to initiate changes and developments for the progress of education. The Accounting Education Program at Muhammadiyah University Surakarta has experienced significant changes and developments, undergoing an educational transformation through the introduction of technology-based learning and the cultivation of digital skills. Innovations in technology-based learning within the framework of the Accounting Education Program encompass the adoption of platforms such as open learning, Zoom, and Schoology. In another study, educators explained that learning innovation can be defined as the interaction among a series of practices, methods, and complex designs that are part of higher education efforts to enhance the teaching and learning experiences of students.[28] In technology-based learning, students are provided with specialized platforms to access and study learning materials, as well as to complete individual or group assignments, using platforms provided by instructors as learning tools. With the existence of open learning, Zoom, and Schoology, both students and instructors gain experience in online or flexible learning, enabling them to practice and develop digital skills. From previous research, researchers have found that various forms of learning innovations have been developed, such as the development of learning innovations in the form of games to increase the engagement of undergraduate students.[29] In designing learning innovations, the goal is to support those without specific pedagogical backgrounds who wish to use good basic instructional design tools and continue to explore the boundaries of innovation.

In addition to technology-based learning innovations, the role in the transformation of education in the digital era has other impacts on the development of digital skills. Based on interview results, researchers found the development of digital skills experienced by students during learning. With the presence of information and communication technology (ICT), students can practice and develop skills that can be strategically applied in various fields. In the Accounting Education Program at Muhammadiyah University Surakarta, ICT can be used as a tool in the implementation of specific courses, such as Data Processing Techniques and Accounting Learning Media Practices. Several studies have explained that training in creating interactive multimedia resources or using simulations can enhance the ability of educators to support student-centered

[27] Ayşe Taşkiran, "Dijital çağda yükseköğretim," *Açıköğretim Uygulamaları ve Araştırmaları Dergisi* 3, no. 1 (January 31, 2017).

[28] Joshua Kim and Edward Maloney, *Learning Innovation and the Future of Higher Education* (JHU Press, 2020).

[29] C. Areekul, "The Development of Learning Innovation as Board Game for Enhanceing the Active Citizen of the Undergraduate Student," *Panna Panithan Journal* 5, no. 2 (2020).

learning, involving students in collaborative learning.[30,31] With the rapid pace of technological advancement, students must keep up with these developments by utilizing digital resources in their learning. Digital resources are not only useful in teaching practices but also beneficial for developing digital skills by deepening their understanding of ICT and receiving guidance from educators for easy learning and comprehension. However, the development of digital skills also needs support from adequate facilities, software, and reliable internet access, along with support from educators in integrating ICT into the classroom. In the Accounting Education Program at Muhammadiyah University Surakarta, there are already adequate facilities and competent ICT in classrooms and laboratories, such as software updates on computers, improved internet access, and the use of smart classrooms. Some researchers focus on how the conditions that facilitate this school affect the intention to use ICT.[32] Therefore, schools must also provide adequate facilities to offer innovation and development in learning.

The role of educational transformation in the digital era in improving the quality of students brings positive changes for both teachers and students in the implementation of learning. These fundamental changes include innovative teaching methods, skills training, professional development, infrastructure improvement, and quality enhancement. In the digital education transformation, students can more easily grasp concepts without spending a lot of time. Previous research indicates that learners can conceptualize concepts more easily, develop skills, and find learning interesting and entertaining.[33] Educational transformation also provides a new platform for educators. With the presence of digital education systems, educators have numerous options for utilizing new methods and techniques to educate students. Teachers feel more entertaining and creative through the use of various educational technologies. Previous research notes that educators perceive technology as an innovative tool.[34] Interview results also indicate that Accounting Education professors at Muhammadiyah University Surakarta agree with the statement that educators can use various innovative methods and teaching aids in their teaching activities. Despite

[30] Raj Kapur Shah and Linda Anne Barkas, "Analysing the Impact of E-Learning Technology on Students' Engagement, Attendance and Performance," *Research in Learning Technology* 26 (December 20, 2018), https://doi.org/10.25304/rlt.v26.2070.

[31] Chun Lai and Tan Jin, "Teacher Professional Identity and the Nature of Technology Integration," *Computers & Education* 175 (December 1, 2021), https://doi.org/10.1016/j.compedu.2021.104314.

[32] Oluwaseun Funmilola Buraimoh, Charity H. M. Boor, and Gboyega Ayodeji Aladesusi, "Examining Facilitating Condition and Social Influence as Determinants of Secondary School Teachers' Behavioural Intention to Use Mobile Technologies for Instruction," *Indonesian Journal of Educational Research and Technology* 3, no. 1 (February 14, 2022), https://doi.org/10.17509/ijert.v3i1.44720.

[33] Zuzana Straková and Ivana Cimermanová, "Critical Thinking Development—A Necessary Step in Higher Education Transformation towards Sustainability," *Sustainability* 10, no. 10 (October 2018), https://doi.org/10.3390/su10103366.

[34] Ju M Tsarapkina et al., "The Impact of Digital Education Transformation on Technical College Teachers," *Journal of Physics: Conference Series* 2001, no. 1 (August 1, 2021), https://doi.org/10.1088/1742-6596/2001/1/012030.

many positive developments in the digital era, there are still challenges and obstacles arising from educational transformation in the digital era. These challenges include difficulties in adapting to advanced technology, obstacles such as technological disruptions, and the unpreparedness of infrastructure. Based on interviews with professors and students, it is revealed that the majority of students in the Accounting Education Program at Muhammadiyah University Surakarta have been able to adapt to technological advancements in education. However, some students still require training or tutorials to understand it. Occasionally, the difficulties faced by professors and students in adapting to educational transformation are due to a lack of effort to learn and technical issues or internet access problems.

Insufficient facilities, reluctant community behavior, indifference, changes in lecture estimates, and a lack of equipment pose challenges in the wave of educational transformation.[35] In the study by Rohmah, there is a statement that self-development and the improvement of teachers' professionalism require guidance by providing facilities from the government.[36] To face challenges and obstacles in educational transformation, universities must have enriched infrastructure that can create digital learning spaces accessible to both students and lecturers. In developing countries like Indonesia, there are people from diverse economic backgrounds. Several studies indicate that not everyone can access the Internet, and high-speed access poses a challenging obstacle hindering the path of digitalization.[37] Universities are confronted with various obstacles such as insufficient facilities, community reluctance, indifference, changes in lecture estimates, and the lack of equipment. It is crucial for them to build enriched infrastructure to create digital learning spaces accessible to both students and lecturers.

CONCLUSION

In the transformation of education, both teachers and students hold positive perspectives on the role of digital transformation in education. From the teachers' standpoint, they reap various benefits, such as (1) diverse innovations in teaching methods, (2) the ability to be effective learning facilitators using digital technology, and (3) professional development. Students' perspective on the role of educational transformation in the digital era includes rapid advancements in education, ranging from teaching methods to classrooms equipped with advanced technology or smart classrooms, and various learning innovations. In the future, research could focus on implementing best practices, developing relevant curricula, teacher training, and ongoing monitoring and

[35] R. Firmansyah et al., "Educational Transformation: An Evaluation of Online Learning Due to COVID-19," *International Journal of Emerging Technologies in Learning*, 2021.

[36] Wafrotur Rohmah, "Upaya Meningkatkan Pengembangan Keprofesian Berkelanjutan dalam Peningkatan Profesionalisme Guru," *Seminar Nasional Pendidikan (SNP)*, April 2, 2016.

[37] H. Khan and J. Iqbal, "Evolution of Online Education: Transformation of Education in India," *Praxis International Journal of Social Science and Literature* 4, no. 1 (2021).

evaluation. Further research is expected to aim at developing a comprehensive framework that can guide stakeholders in designing strategies tailored to the needs and unique challenges of various education systems, ensuring that the benefits of digital transformation can be accessed by all students.

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