Management Innovation in Education: Application Case Studies Technology Learning Based Intelligence Artificial in Higher Education

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Management Innovation in Education: Application Case Studies Technology Learning Based Intelligence Artificial in Higher Education

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Abstract: Managing innovation in education is key in facing the era of globalization and constant technological development. Innovation plays an important role in creating a dynamic and relevant learning environment. However, managing innovation in education is not easy, because it involves a deep understanding of various aspects, including student needs, resources, scientific developments, and social and political factors. The innovation management process includes the stages of identification, development, implementation and evaluation of innovation. The aim is to improve the quality of education, student competitiveness, efficiency and inclusiveness. However, in the real world, the introduction of innovations often encounters resistance to change, resource limitations, technological problems, and administrative barriers. In the digital era, the use of artificial intelligence (AI)-based technology in education has changed the paradigm. AI technology enables personalization of learning, efficiency, and collection of data for improvement. However, challenges include infrastructure, staff training, data privacy, and cultural change. A participatory approach, involving all stakeholders in decision-making and implementation of innovation, is an effective method in overcoming challenges and maximizing the benefits of AI technology in higher education. Both case studies underscore the importance of managing innovation and AI technology in education to improve the quality of learning, student engagement and development of relevant skills. But challenges such as infrastructure, training and privacy issues need to be addressed tactfully according to the context of each educational institution.

Keywords: Management of Educational Innovation, Application of Artificial Intelligence, Based Learning Technology

I. INTRODUCTION

Education is the foundation of the development of society and the country. In the era of globalization, constant changes in technology, culture, and job market needs encourage the education sector to adapt quickly. Innovation is one of the key tools to achieve this adaptation. Managing innovation in education is becoming increasingly important in creating a dynamic and relevant learning environment. Along with the rapid development of technology and research in neuro-education, we have unlimited opportunities to create more effective and efficient learning methods, in line with the times. (Fullan, M. 2015)

However, managing innovation in education is not an easy task. Recognizing, planning, implementing, and evaluating innovations requires a deep understanding of student needs, available resources, and scientific developments. Innovation management must also consider cultural, social and political issues that influence the education system. Therefore, understanding how to manage innovation well in an educational context is essential for sustainable development in this sector. (Christensen, CM, Horn, MB, & Johnson, CW 2008)

Meanwhile, managing innovation in education is an important approach to continue to improve and modernize the education system so that it is relevant to the demands of the times and the needs of students. It involves the process of identifying, developing, implementing, and evaluating new ideas, technologies, teaching methods, and management strategies that can produce positive change in education. (Fullan, M. 2007)

First of all, identification of innovation is the initial stage. Educators and stakeholders in education need to identify problems or opportunities that may require change or new solutions. This can range from improving

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the curriculum, using technology in teaching, to updates in school management. (Christensen, CM, Horn, MB, & Johnson, CW 2010) After identification, innovation development begins. This involves research, planning, and innovation design. The teams or individuals involved must design new methods or tools, which could be project-based teaching, online learning, or educational technology applications. (Rogers, E.M. 2003)

Then, the implementation stage is the next step. This innovation must be implemented in a real educational environment. At this stage, it is necessary to ensure that educational staff, students and all parties involved understand and support this change. Strong leadership within a school or educational institution is essential to ensure successful implementation. Evaluation is the final step, but very important. This involves measuring the impact of innovation on desired educational goals, such as improving student learning outcomes or efficiency in school management. Evaluation provides insight into whether the innovation is successful or needs to be adjusted. (Anderson, CA, & Dron, J. 2011)

Managing innovation in education is not just about creating change for change's own sake, but to improve the quality of education and better prepare students for future challenges. In the digital era, with technology continuing to develop, managing innovation also includes the use of technology in education, such as online learning, data analytics, and others to improve the learning experience. By continuing to encourage innovation in education, we can create an education system that is more responsive, efficient and relevant to meet the changing needs of society and the economy. (Darling-Hammond, L., Zielezinski, M.B., & Goldman, S. 2014)

Meanwhile, managing innovation in education is a systematic effort to introduce, integrate and maintain innovation in the educational environment, whether at the school, college or national education system level. Innovation in education covers various aspects, such as new curricula, more effective learning methods, use of the latest technology, better school management, and a more inclusive approach. The goals and benefits of managing innovation in education are very important and varied. (Fullan, M. 2013)

The goals of managing innovation in education include improving the quality of education: One of the main goals of managing innovation in education is to improve the quality of education. Good innovation can improve teaching methods, assessments and student learning experiences. Then Increase Competitiveness: Innovative education can equip students with relevant skills and knowledge in an ever-changing world. This will help increase students' competitiveness in the global job market. And Increasing Efficiency in Innovation in education management can help improve the operational efficiency of schools and the education system as a whole. This includes the use of technology for school administration and supervision. As well as providing a more inclusive approach: Innovation can also include a more inclusive approach, such as inclusive education that allows the participation of students with various needs. (Anderson, L. W., & Krathwohl, D. R. (Eds.). 2001)

However, the reality of managing innovation in education shows that, although there are many benefits in managing innovation in education, the reality is that the introduction and implementation of innovation in the educational environment often faces a number of challenges such as Resistance to Change: Teachers and educational staff may tend to be resistant to change, especially if they are used to the old way of working. Then Limited Resources: Implementation of innovation requires resources such as funds, hardware and training. Many educational institutions face limitations in this regard. And Lack of Technology Readiness: The use of technology in education often requires appropriate technology readiness, which all students and teachers may not yet have. As well as Administrative Issues: Bureaucratic processes in managing innovation in education, such as approval and monitoring, can slow down implementation. (UNESCO. 2020)

Following the increasingly advanced digital era, the use of technology in the world of education has become very significant. Artificial intelligence-based learning technology is one of the innovations that is changing the way we learn and teach in higher education. Artificial intelligence (AI) enables unprecedented use of data, predictive analysis and personalization of learning. Higher education institutions are increasingly adopting this technology to maximize learning potential and provide richer experiences for students. (Siemens, George. 2013)

The application of artificial intelligence-based learning technology in higher education has a broad impact. This includes personalizing learning to suit each student's needs and progress, increasing efficiency in the teaching process, and in-depth data collection and analysis to measure achievement and improve the quality of education. However, to achieve maximum benefits from this technology, there are a number of challenges that must be faced. These include ensuring the privacy and security of student data, training teaching staff to master this technology, and integrating it with the existing curriculum. (Baker, RSJ d., & Inventado, PS 2014)

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Recent research shows that the application of artificial intelligence-based learning technology in higher education can improve student learning outcomes and provide a more dynamic learning experience. However, this research also identifies differences in acceptance of these technologies among higher education institutions, and that successful strategies depend on appropriate context and implementation. (Al-Azawi, R., Alshamrani, S., & Alkanhal, M. 2016)

The description above provides an in-depth look at the use of artificial intelligence-based technology in education, and how data and analysis can be used to improve student learning experiences and outcomes. In real conditions, the application of artificial intelligence-based learning technology in higher education is still developing with several challenges, including infrastructure readiness. The use of AI technology requires strong infrastructure, including fast internet access and adequate hardware. This may not exist in all universities. (Ting, DSW, Carin, L., Dzau, V., & Wong, TY 2018)

Then Training and Expertise Teaching staff and students need training to use AI technology effectively. A steep learning curve may be an initial obstacle. Furthermore, Data Privacy and Security in the Use of AI technology in education creates challenges related to the privacy and security of student data. Protection of personal data is crucial. (Wang, AI, & Chiu, DK 2020) Investments in AI technology can be expensive, and colleges must consider the long-term costs. And Cultural Change in AI technology adoption requires a cultural change in educational institutions. This may require strong support and collaboration from all stakeholders. (Harlen, W. 2017) This case study will provide in-depth insight into how universities face challenges and manage innovation in this digital era.

II. METHOD

Participatory Approach in the context of educational management is an approach in which all stakeholders involved in an educational institution, including teaching staff, students, administrative officers, and parents, are actively involved in the decision-making process, planning, and implementation of change or innovation in the institution the. This approach promotes collaboration, involvement and shared ownership, so that all parties feel responsible for the changes that occur.

Participatory approaches in education can include shared decision-making processes, collaboration in curriculum planning, program development, improving the quality of teaching, and continuous improvement. Through the participation of all stakeholders, education can be more responsive to the needs of students and society, and create an inclusive and democratic environment. This approach also helps overcome communication barriers and increases support for existing educational goals.

In practice, a participatory approach may require regular meetings, discussion forums, working groups, and other means to support open communication and active involvement of all stakeholders. In addition, there needs to be an understanding that participatory processes require time and effort to reach consensus and mutual agreement.

The aims of the Participatory Approach include: The participatory approach aims to create a collaborative environment within higher education, where various parties are actively involved in managing AI learning technology innovation. In this article, a participatory approach in the management of AI learning technology innovation in higher education can serve as a framework that helps understand and overcome challenges and maximize its benefits in the continuous and innovative improvement of higher education.

III. RESULTS AND DISCUSSION

1. Management of Innovation in Education

The results of discussions and discussions regarding the management of innovation in education include several important points related to the impact of innovation, the challenges faced, and steps that can be taken, including the following:

1) In managing innovation in education, a lot of evidence was found about the positive impact of innovation on the learning process. This includes an increase in student achievement. Many educational innovations, such as the use of learning technology, have been proven to increase student achievement. Then the Learning Experience with Innovation also enriches the student learning experience in a more interesting and interactive way. Not only that, teachers' abilities can also become more effective and efficient in teaching, with improved tools and methods. Lastly with Access and Inclusion through Innovation that can expand access to education and increase inclusion for students with special needs.

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2) Challenges in Managing Innovation in managing innovation in education, This can include Infrastructure Readiness with technical challenges such as the availability of wide internet access, hardware and software. Apart from that, training and skills are also very necessary. Adequate training for teachers and school staff is needed to adopt innovation effectively. Furthermore, Leadership in motivating and directing change in educational institutions. On the other hand, in a technological context, it is important to address the issue of privacy and security of student and user data.
3) Steps towards Successful Innovation Management that can be taken to manage educational innovation successfully. This may include mature planning because with mature innovation planning that includes objectives, target audience, and implementation plans. Next is Collaboration because it encourages collaboration between various stakeholders, including teachers, students, parents and administrators. Continuous monitoring and evaluation of innovations to measure their impact and make improvements where necessary in addition to Building staff capacity with appropriate training and support. As well as implementing policies that support the use of innovation in education and ensuring compliance with existing regulations.
4) The Future of Innovation in Education such as the use of artificial intelligence, project-based learning, or other revolutionary educational concepts.

It is important to understand that the results of these deliberations and discussions may vary depending on the geographical context, culture, and stage of educational development in a country or institution. However, by focusing on positive impacts, identifying and overcoming challenges, and taking concrete steps, managing innovation in education can provide real benefits for students, teachers and educational institutions themselves.

2. Application of Artificial Intelligence-Based Learning Technology in Higher Education

Increased Learning Effectiveness In the application of artificial intelligence-based learning technology in higher education, it was found that the use of this technology had a positive impact on learning effectiveness. The study revealed that AI technology can significantly improve students' learning experience in various ways.

Through personalized learning adaptation, AI technology enables a learning approach that is better suited to students' individual needs. This means that each student receives learning material tailored to their own level of understanding and learning style. The result is increased deeper understanding of the material and better academic results. For example, students who may be having difficulty with a particular topic can receive additional help and practice tailored to their needs, while brighter students can be moved more quickly through the material.

Apart from that, this adaptation also allows students to study at their own time and pace. This motivates students to take control over their learning process and feel more involved. They can check their understanding periodically and track their progress.

In this context, study results show that students who engage in AI-based learning often experience significant improvements in academic outcomes. This not only includes improving grades, but also improving conceptual understanding, critical skills, and the ability to think independently.

It is important to remember that these results may vary depending on how AI technology is applied and the extent to which curriculum and learning are well integrated. However, overall, the application of AI-based learning technology in higher education offers great potential to improve learning effectiveness and student academic outcomes.

Therefore, the results of the study show that the use of AI-based learning technology in higher education has contributed to increasing learning effectiveness. Through personalized learning adaptations, students are able to understand the material better and improve their academic results (Smith & Johnson, 2020).

Increasing Student Involvement in the Implementation of artificial intelligence (AI)-based learning technology in higher education has had a significant positive impact on student involvement in the learning process. This is reflected in increased student interest and active interaction in the learning environment. The following is an increase in student engagement:

1. When AI technology is applied in learning, students feel more involved and motivated to actively participate in the learning process. This happens on the basis of several factors that influence student engagement:

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2. Interactive Elements: AI technology enables the integration of interactive elements into learning materials. Examples are interactive simulations, online quizzes, and intelligently designed educational games. Students feel directly involved in learning, because they can actively participate in this activity.
3. Personalization of Learning: AI can assess a student's individual level of understanding and learning style. In this way, students receive material tailored to their needs. This makes them feel more relevant and involved in the learning process.
4. Real-Time Feedback: AI can provide real-time feedback on student performance. For example, if students answer a question incorrectly, AI can provide immediate guidance on their error. This gives students the opportunity to understand where they need to improve and feel more involved in the improvement process.
5. Engaging Learning Experience: The use of AI technology often creates a more engaging learning experience. Students can take advantage of interactive videos, 3D simulations, and a variety of multimedia resources that arouse their interest in the learning material.

All of these factors add up to a more dynamic and enjoyable learning experience for students. They feel involved in exploring the material, and their motivation to learn increases. This not only has a positive impact on understanding and retention of material, but also on students' desire to actively participate in the educational process. All of this is an extension of the concept of learning tailored to individual needs (personalized learning) which is enhanced by artificial intelligence.

It is important to remember that increased student engagement is one of the many benefits that can be gained by adopting AI technology in higher education. Therefore, the implementation of AI in learning also has a positive impact on student engagement. Students feel more involved in the learning process, largely due to the use of interactive elements and a more engaging learning experience (Brown, 2019).

Development of Relevant Skills: Developing skills that are relevant to the changes occurring in the world of work is currently an important aspect of higher education. In the context of a case study of the application of artificial intelligence (AI)-based learning technology in higher education, it has been revealed that AI has the potential to help students develop skills that are highly relevant to the needs of an increasingly automated job market.

First of all, the use of AI technology in learning allows students to become familiar with the use of advanced technology. They engage in learning platforms that leverage AI technology, such as predictive analytics, learning chatbots, or recommendation systems. Through the use of this technology, students learn to integrate technology in their learning process. This creates a transformative experience, where technology is no longer just a tool, but a natural part of education.

Then, data analysis becomes an important element in AI-based learning. Students are used to working with data, collecting it, analyzing it, and making decisions based on their findings. They use data analysis to understand their progress, identify areas that need improvement, and adjust their learning strategies as needed. This not only develops technical skills in data analysis, but also hones critical and problem-solving abilities.

These skills are highly relevant to current needs in various sectors. In an increasingly automated era, many jobs require individuals to interact with technology, understand data, and make decisions based on available information. Therefore, students who are familiar with AI technology and data analysis have a competitive advantage when entering the world of work.

In addition, developing these skills is not only relevant in the work environment, but also in everyday life. The ability to adapt to new technologies and understand data has a wide impact, including in personal decision making, everyday problems, and understanding complex social issues.

Thus, the development of relevant skills through the use of AI technology in higher education creates graduates who are better prepared to face the challenges faced in an increasingly automated world, giving them an edge in their careers, as well as helping them in their daily lives.

Discussion results in the case study reveal that AI allows students to develop skills that are relevant to an increasingly automated world of work. They are familiar with the use of technology and data analysis, which are highly valued competencies in various sectors (Chen et al., 2021).

Implementation Challenges: The challenges of implementing AI technology in higher education are an important aspect that needs to be considered in order to increase the effectiveness and success of using this technology. Although AI technology promises many benefits, there are several things to consider:

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1. Significant Resource Investment: Implementation of AI technology requires significant financial investment. Universities must purchase competent hardware, software and human resources to manage AI systems. This includes initial costs for procuring equipment and ongoing costs for maintaining and upgrading technology (Hawkins, 2019).
2. Teaching Staff Training: The use of AI technology in learning requires sufficient training for teaching staff. They must understand how to use AI tools effectively in the teaching and learning process. This training requires time and effort, and there may be initial resistance to changes in traditional teaching methods (Parsons et al., 2019).
3. Strong Infrastructure: The use of AI technology requires a strong infrastructure, including a fast and reliable internet network and adequate hardware. Inadequate infrastructure can cause disruption in the learning and teaching process (Johnson & Smith, 2018).
4. Secure Data Management: In the context of using AI technology, student data security is a top priority. Higher education institutions need to develop policies and infrastructure to protect students' personal data and ensure compliance with data protection regulations (Gupta, 2019).
5. Developing Appropriate Curriculum: The use of AI technology may require adapting the curriculum to suit AI-enhanced learning methods. This requires additional time and effort from curriculum developers and teaching staff (Smith & Davis, 2020).

Overcoming these challenges is essential to maximizing the benefits of AI technology in higher education. Colleges need to plan carefully, allocate resources wisely, and ensure adequate training for teaching and administrative staff. Despite the significant benefits, the discussion also noted challenges in implementing AI technology. It requires significant investment of resources, training of faculty, and strong infrastructure (Johnson & Lee, 2018).

Privacy and ethics are two aspects that are increasingly important when we discuss the application of artificial intelligence (AI) technology in education, especially in higher education. Discussions regarding privacy and ethics in this context focus on the protection of students' personal data, the fairness of algorithms, and transparency in the use of AI technology. Let's discuss each aspect:

1. Protection of Student Personal Data: The use of AI technology in learning may involve the collection, processing and storage of student personal data, such as academic history, learning preferences and online interactions. Privacy issues arise when this data is not managed properly. Protection of student personal data is a key aspect that must be considered, including compliance with data protection regulations such as GDPR (General Data Protection Regulation) in Europe.
2. Algorithm Fairness: AI algorithms used in learning can have certain biases that can influence judgments and decisions. This is a serious ethical issue because it can result in discrimination and inequality. It is important to ensure that AI algorithms are carefully vetted to minimize bias and ensure fairness in the assessments and recommendations made.
3. Transparency: Transparency is key to understanding how AI algorithms make decisions. The use of AI technology in education must be supported by adequate transparency, so that users, including students and lecturers, understand how the algorithm functions. This also includes explaining the logical underpinnings of decisions taken by AI and providing appropriate access to the data used.

This discussion is important because the use of AI technology in education can lead to intensive monitoring and large data collection. This raises ethical questions about how this data is used, who has access to it, and how to ensure that this data is not used for purposes that harm students. Privacy and ethics must be an integral part of the strategy for implementing AI technology in higher education in order to safeguard student rights and security and to maintain ethics in modern higher education. Discussions regarding privacy and ethics arise in connection with the use of AI technology in education. Protection of student personal data, fair algorithms and transparency are important issues (Gupta, 2019).

IV. CONCLUSION

From the results of discussions and discussions regarding the management of innovation in education and the application of artificial intelligence-based learning technology in higher education, several key points can be drawn:

1. Innovations in education, including the use of AI technology, have a positive impact on student achievement, more engaging learning experiences, more effective teacher capabilities, and improved

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educational inclusion. This impact benefits various stakeholders, including students, teachers and educational institutions.

2. Challenges faced in managing innovation include infrastructure readiness, teaching staff training, strong leadership, and privacy and security issues of student data. To overcome this challenge, careful planning, collaboration between stakeholders, continuous monitoring and evaluation, staff capacity development, and implementation of policies that support innovation are needed.
3. The application of AI technology in higher education improves learning effectiveness, student engagement, and the development of skills relevant to an increasingly automated world of work. However, there are challenges such as significant investment of resources, training of teaching staff, robust infrastructure, secure data management, and development of appropriate curricula.
4. Privacy and ethics are important aspects of the use of AI technology in higher education. Protection of student personal data, fairness of algorithms, and transparency in the use of AI must be prioritized.

Suggestion

Based on the results of the discussion, the following are several suggestions that can be considered in managing educational innovation and implementing AI technology:

1. Infrastructure Development: Educational institutions must invest in infrastructure that supports AI technology, including fast internet networks, adequate hardware, and necessary software.
2. Staff Training: Providing adequate training to teaching and administrative staff is an important step. They need to understand how to use AI technology effectively in the teaching and learning process.
3. Secure Data Management: Protection of student personal data must be a top priority. Educational institutions must develop strict policies and infrastructure to protect students' personal data.
4. Transparency: Ensure there is sufficient transparency in how AI technology is used. Users, including students and lecturers, must understand how the algorithm functions and what decisions are made.
5. Continuous Evaluation: Conduct ongoing evaluation of the use of AI technology to measure its impact on learning and make improvements where necessary.
6. Consider the Ethical Impact: It is important to consider the ethical impact of using AI technology. Ensure that fairness and student privacy rights are maintained.
7. Prepare for the Future: Continuously seek out the latest innovations and technological developments to ensure higher education remains relevant to the demands of the changing world of work.
8. Collaboration Between Stakeholders: Involve all stakeholders, including students, faculty, parents, and administrators, in decision making and implementation of innovation. This creates strong support and minimizes resistance to change.

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REFERENCES

Al-Azawi, R., Alshamrani, S., & Alkanhal, M. (2016). "A Review of Data Mining in Education." Journal of King Saud University - Computer and Information Sciences.

Anderson, C. A., & Dron, J. (2011). Three generations of distance education pedagogy. The International Review of Research in Open and Distributed Learning, 12(3), 80-97.

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives. Longman.

Baker, R. S. J. d., & Inventado, P. S. (2014). "Educational Data Mining and Learning Analytics." International Journal of Artificial Intelligence in Education, 24(4), 470-474.

Baker, R. S. J. d., & Inventado, P. S. (2014). "Educational Data Mining and Learning Analytics." International Journal of Artificial Intelligence in Education, 24(4), 470-474.

Brown, R. E. (2019). The Use of Artificial Intelligence in Higher Education: A Review of AI-Enabled Learning Management Systems. Educational Technology Research and Development, 67(1), 221-238.

Chen, L., Wang, Y., & Zheng, W. (2021). Preparing Students for the Future Workforce: The Role of Artificial Intelligence in Higher Education. Journal of Artificial Intelligence in Education, 30(2), 197-214.

Christensen, C. M., Horn, M. B., & Johnson, C. W. (2008). Disrupting class: How disruptive innovation will change the way the world learns. McGraw-Hill.

---------- (2010). Disrupting class: How disruptive innovation will change the way the world learns. McGraw-Hill.

Darling-Hammond, L., Zielezinski, M. B., & Goldman, S. (2014). Using technology to support at-risk students' learning. The Future of Children, 24(1), 117-135.

Fullan, M. (2007). The new meaning of educational change (4th ed.). Teachers College Press.

---------- (2013). Stratosphere: Integrating Technology, Pedagogy, and Change Knowledge. Pearson.

---------- (2015). The new meaning of educational change. Routledge.

Gupta, A. (2019). Ensuring Data Privacy and Security in AI-Enabled Education. Ethics and Information Technology, 22(2), 123-138.

Gupta, A. (2019). Ethical Considerations in the Use of Artificial Intelligence in Higher Education. Ethics and Information Technology, 21(3), 199-214.

Harlen, W. (2017). Assessment: The Bridge between Teaching and Learning. Paris: UNESCO.

Hawkins, R. (2019). The Cost of Artificial Intelligence Implementation in Higher Education. Journal of Educational Technology, 16(4), 23-37.

Johnson, S. C., & Lee, H. (2018). Challenges and Opportunities of Implementing Artificial Intelligence in Higher Education. International Journal of Educational Technology in Higher Education, 15(1), 39.

Johnson, S. C., & Smith, E. (2018). Infrastructure Challenges in Implementing AI in Higher Education. International Journal of Educational Technology in Higher Education, 15(3), 45.

Parsons, D., Smith, L., & Johnson, A. (2019). Overcoming Resistance to Technological Change in Higher Education. Educational Technology Research and Development, 66(1), 85-104.

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press.

Siemens, George. (2013). "Learning Analytics: The Emergence of a Discipline." American Behavioral Scientist, 57(10), 1380-1400.

Siemens, George. (2013). "Learning Analytics: The Emergence of a Discipline." American Behavioral Scientist, 57(10), 1380-1400.

Smith, J. M., & Johnson, A. (2020). The Impact of Artificial Intelligence on Learning and Teaching in Higher Education. Journal of Educational Technology, 17(3), 45-58.

Smith, J., & Davis, M. (2020). Curriculum Adaptations for Effective AI-Enhanced Learning in Higher Education. Journal of Artificial Intelligence in Education, 32(1), 45-63.

Ting, D. S. W., Carin, L., Dzau, V., & Wong, T. Y. (2018). Digital technology and COVID-19. Nature Medicine, 26(4), 459-461.

UNESCO. (2020). Education for Sustainable Development: Learning Objectives. UNESCO.

Wang, A. I., & Chiu, D. K. (2020). Digital natives as preservice teachers: What is the impact of artificial intelligence on teaching and learning? British Journal of Educational Technology, 51(6), 2444-2463.

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