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Implementation Of The Use Of Artificial Intelligence In Higher Education

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ABSTRACT

Higher education is currently undergoing significant digital transformation, with artificial intelligence (AI) emerging as a key innovation shaping this change. This research elaborates on the implementation and impact of AI in the context of higher education. The discussion encompasses the influence of AI on the learning process, improvements in administrative efficiency, and shifts in the education paradigm. The research also explores specific AI applications, such as adaptive learning, sentiment analysis, and data management, which substantially enrich student learning experiences and support decision-making in higher education institutions. While the benefits are substantial, the research also highlights challenges and issues that may arise, including privacy concerns, data security, and the integration of technology into academic curricula. In conclusion, the implementation of artificial intelligence in higher education has the potential to be a cornerstone in shaping students who are prepared for the demands of knowledge-based societies and contributing to the development of a more adaptive and innovative education system.

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1. INTRODUCTION

Artificial Intelligence (AI) is an innovative system developed to model and innovate in various study fields, both in machines and computers, capable of possessing intelligence equal to or even surpassing humans [1]. Originally created to assist human tasks, AI has evolved beyond being a mere assistant to humans, now having the capability to replace certain human tasks. Presently, the world has entered the era of Artificial Intelligence (AI), where AI plays a crucial role in various aspects of life, including education. AI has introduced innovative solutions in learning and teaching, implemented across various educational environments [2].

Research by Reza Dea Yogaswara in the journal titled ”Artificial Intelligence as a Driver of Industry 4.0 and Its Challenges for the Public and Private Sectors” highlights the role of AI in propelling Industry 4.0 and the challenges faced by the public and private sectors [3]. Additionally, the integration of information technology and law plays a crucial role in enhancing human well-being, despite originating from distinct scientific fields [4]. Legal regulations regarding technology, especially artificial intelligence, are essential to safeguard the rapid development of technology [5].

While some countries have designated artificial intelligence as a legal entity with rights and obligations, Indonesia still lacks specific regulations regarding artificial intelligence. This could potentially lead to issues in the future if artificial intelligence engages in unlawful activities [6]. Therefore, efforts should be made to develop normative regulations that limit the use of artificial intelligence within the framework of positive law. Innovation continues to advance, especially in Industry 4.0, encompassing various aspects such as the Internet of Things, artificial intelligence, autonomous vehicles, and other technologies [7].

In general, artificial intelligence, according to this definition and description, involves the development of machines with a certain level of intelligence capable of performing functions similar to humans, including perception, knowledge, judgment, and adaptation to the environment. Therefore, artificial intelligence must possess specific characteristics and principles [8]. The discussion and description of artificial intelligence lead to the discovery that one important characteristic of artificial intelligence is intelligence, or the machine's capacity to demonstrate various levels of intelligence and perform tasks and talents that require human-like abilities [9].

2. RESEARCH METHODS

This research employs a qualitative descriptive approach with detailed and in-depth explanations, utilizing a qualitative descriptive method in the form of a questionnaire for data collection. The research procedure involves formulating research questions, determining data collection methods and techniques, analyzing data, and compiling a report [10].

Learning systems in artificial intelligence, and learning models, are crucial for enhancing independent learning [11]. This is constructed from student behavioral data as a result of the learning process. The thinking abilities and student capacities are examined to determine their learning potential [12]. Subsequently, knowledge analysis is applied for students to master that knowledge. The learning model builds a connection between learning outcomes and various elements such as instructional materials, resources, and instructional behavior [13]. Knowledge models establish detailed learning content and maps the structure of knowledge, often including specific data, rules for common learner errors, and misunderstandings [14]. Integrating domain knowledge models with learner models, the instructional model defines guidelines for accessing knowledge domains, allowing instructors to adjust teaching methods and techniques [15]. As education progresses, students tend to behave well, act, or seek assistance. Artificial intelligence systems can be continuously improved and configured to provide support from integrated guidance strategies based on instructional theory [16].

3. RESULT AND DISCUSION

There is 1 aspect or indicator that is the focus of this research through a questionnaire distributed to students: the analysis of user experiences with artificial intelligence in the learning process and the impact of artificial intelligence on the learning process [17].

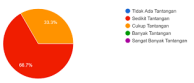

Figure 1. Measuring Digital Business Value

In the aspect or indicator of the Impact Analysis of the use of artificial intelligence on the learning process, an average of 33% reported "Quite challenging" and 68.7% reported "Slightly challenging [18]." They mentioned that using artificial intelligence in the learning process enhances understanding of the learning material[19]. By connecting students to virtual classrooms using artificial intelligence, virtual reality, for instance, facilitates learning beyond traditional research settings and creates classrooms worldwide [20].

Artificial intelligence is utilized in education, in various ways and for various purposes, significantly impacting effectiveness and administrative operations in the field of education [21]. This enables educators or instructors to be more efficient in carrying out tasks, such as student assessments and feedback [**?**]. Intelligent and flexible web-based teaching platform programs have incorporated features that provide assessment

guidance to instructors, making it easier to evaluate student work and provide critiques [23]. Comparable abilities and features, accessible within programs like Knewton, offer instructors built-in functionality to measure effectiveness and grades, providing student feedback to encourage continuous learning development [**?**].

Artificial Intelligence (AI) has emerged as a transformative force in higher education, influencing various aspects of academic processes and administrative functions. The integration of AI technologies has significantly impacted the learning experience, administrative efficiency, and educational paradigms within institutions of higher learning [25].

4. CONCLUSION

One notable effect of AI implementation in higher education is its positive influence on the learning process. Adaptive learning platforms powered by AI algorithms have personalized educational content, providing students with tailored learning experiences. This has led to enhanced comprehension, engagement, and overall academic performance among students. The ability of AI to analyze individual learning patterns and adapt instructional strategies accordingly contributes to a more efficient and effective educational environment. Furthermore, the administrative landscape of higher education institutions has witnessed substantial improvements through the use of AI.

AI-driven systems streamline administrative tasks, such as admissions, enrollment, and grading, reducing manual workload and potential errors. This results in increased operational efficiency, allowing educators and administrators to focus more on strategic planning, teaching, and research endeavors. Despite the evident advantages, challenges accompany the implementation of AI in higher education. Privacy concerns, data security, and ethical considerations are crucial factors that demand careful attention.

Institutions must establish robust ethical frameworks and stringent security measures to address these challenges and ensure the responsible use of AI technologies. In conclusion, the implementation of AI in higher education signifies a paradigm shift in the way learning is facilitated and administrative tasks are managed. While enhancing the learning experience and operational efficiency, it is imperative for educational institutions to navigate the ethical and security considerations associated with AI implementation, ensuring a harmonious integration that maximizes the benefits for all stakeholders.

REFERENCES

[1] Sciarelli, M., Cosimato, S., Landi, G., & Iandolo, F. (2021). Socially responsible investment strategies for the transition towards sustainable development: The importance of integrating and communicating ESG. The TQM Journal, 33(7), 39-56.

[2] Luo, S., Yimamu, N., Li, Y., Wu, H., Irfan, M., & Hao, Y. (2023). Digitalization and sustainable development: How could digital economy development improve green innovation in China?. Business Strategy and the Environment, 32(4), 1847-1871.

[3] Hutahayan, B. (2020). The mediating role of human capital and management accounting information system in the relationship between innovation strategy and internal process performance and the impact on corporate financial performance. Benchmarking: An International Journal, 27(4), 1289-1318.

[4] Tien, N. H., Anh, D. B. H., & Ngoc, N. M. (2020). Corporate financial performance due to sustainable development in Vietnam. Corporate social responsibility and environmental management, 27(2), 694-705.

[5] Habib, A. M. (2023). Do business strategies and environmental, social, and governance (ESG) performance mitigate the likelihood of financial distress? A multiple mediation model. Heliyon, 9(7).

[6] Cunha, F. A. F. D. S., Meira, E., & Orsato, R. J. (2021). Sustainable finance and investment: Review and research agenda. Business Strategy and the Environment, 30(8), 3821-3838.

[7] Suoniemi, S., Meyer-Waarden, L., Munzel, A., Zablah, A. R., & Straub, D. (2020). Big data and firm performance: The roles of market-directed capabilities and business strategy. Information & Management, 57(7), 103365.

[8] Chen, Z., & Xie, G. (2022). ESG disclosure and financial performance: Moderating role of ESG investors. International Review of Financial Analysis, 83, 102291.

[9] Upadhyay, A., Mukhuty, S., Kumar, V., & Kazancoglu, Y. (2021). Blockchain technology and the circular economy: Implications for sustainability and social responsibility. Journal of cleaner production, 293, 126130.

[10] Long, W., Li, S., Wu, H., & Song, X. (2020). Corporate social responsibility and financial performance: The roles of government intervention and market competition. Corporate Social Responsibility and Environmental Management, 27(2), 525-541.
[11] Li, Z., Liao, G., & Albitar, K. (2020). Does corporate environmental responsibility engagement affect firm value? The mediating role of corporate innovation. Business Strategy and the Environment, 29(3), 1045-1055.
[12] Devie, D., Liman, L. P., Tarigan, J., & Jie, F. (2020). Corporate social responsibility, financial performance and risk in Indonesian natural resources industry. Social Responsibility Journal, 16(1), 73-90.
[13] Chen, Y., Kumara, E. K., & Sivakumar, V. (2021). Investigation of finance industry on risk awareness model and digital economic growth. Annals of Operations Research, 1-22.
[14] Braun, B. (2021). Asset manager capitalism as a corporate governance regime. The American political economy: Politics, markets, and power, 270.
[15] Chouaibi, S., Chouaibi, J., & Rossi, M. (2022). ESG and corporate financial performance: the mediating role of green innovation: UK common law versus Germany civil law. EuroMed Journal of Business, 17(1), 46-71.
[16] Ningning, M., & Mengze, Z. (2022). Impact of technological orientation on sustainability financial inclusion and economic growth: role of environmental CSR strategy. International Journal of Economics and Finance Studies, 14(4), 19-44.
[17] Jelonek, D., Tien, N. H., Dao, M. T. H., & Minh, D. T. (2022). Comparative analysis of business strategy of Vietnamese real estate developers: the use of Hoffer matrix. International journal of multidisciplinary research and growth evaluation, 3(1), 197-204.
[18] Tan, T. M., & Salo, J. (2023). Ethical marketing in the blockchain-based sharing economy: Theoretical integration and guiding insights. Journal of Business Ethics, 183(4), 1113-1140.
[19] Windapo, A. O., & Moghayedi, A. (2020). Adoption of smart technologies and circular economy performance of buildings. Built Environment Project and Asset Management, 10(4), 585-601.
[20] Ramos, C. M., & Casado-Molina, A. M. (2021). Online corporate reputation: A panel data approach and a reputation index proposal applied to the banking sector. Journal of Business Research, 122, 121-130.
[21] Coelho, R., Jayantilal, S., & Ferreira, J. J. (2023). The impact of social responsibility on corporate financial performance: A systematic literature review. Corporate Social Responsibility and Environmental Management.
[22] Lin, W. L., Yip, N., Ho, J. A., & Sambasivan, M. (2020). The adoption of technological innovations in a B2B context and its impact on firm performance: An ethical leadership perspective. Industrial Marketing Management, 89, 61-71.
[23] Suchek, N., Fernandes, C. I., Kraus, S., Filser, M., & Sjögrén, H. (2021). Innovation and the circular economy: A systematic literature review. Business Strategy and the Environment, 30(8), 3686-3702.
[24] Lagna, A., & Ravishankar, M. N. (2022). Making the world a better place with fintech research. Information Systems Journal, 32(1), 61-102.
[25] Surya, B., Menne, F., Sabhan, H., Suriani, S., Abubakar, H., & Idris, M. (2021). Economic growth, increasing productivity of SMEs, and open innovation. Journal of Open Innovation: Technology, Market, and Complexity, 7(1), 20.