

Deadline Culture and AI Dependence: A Deep Learning Analysis of Students' Academic Behavior in The Digital Era

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Abstract: In the midst of the widespread use of AI in academic activities, the phenomenon of deadline culture is increasingly seen as a factor that significantly shapes student learning behavior. The purpose of this study is to analyze how deadline culture encourages students to rely on AI as a quick strategy in completing tasks. The analysis is carried out through surveys and digital logs so that the phenomenon is seen empirically and objectively. The second goal is to explore the potential of deep learning in mapping AI usage patterns, including interaction time, intensity, and anomalies that appear before deadlines. This study uses a qualitative approach of the type of literature study with primary data from *the book Deep Learning* by Ian Goodfellow, Yoshua Bengio, and Aaron Courville as well as secondary data from books and articles relevant to this study. The results of this study are, *first*, showing that deadline culture plays a major trigger for the increase in students' dependence on AI, which can be seen through the acceleration of the use of this technology before the deadline, the shift in learning objectives from understanding to task completion, and the emergence of cognitive offloading patterns that weaken independent thinking. *Second*, this study shows that deep learning is effective as an analytical tool to map students' academic behavior patterns, including the intensity of AI use, the type of task that triggers dependence, the motive for digital behavior, and the potential risk of academic dependence.

Keywords: Deadline Culture, Artificial Intelligence, Deep Learning, Students, Academic Integrity.

Introduction

In the context of higher education, the academic process ideally relies on the formation of intellectual independence, scientific honesty, and deep thinking processes. However, the current rhythm of lectures often brings pressure, one of which is deadline that shifts these goals, so that students are encouraged to seek instant solutions through AI technology. In fact, technology should only be a companion to the thought process, not as a substitute. This is in line with the findings of Salsabila et al. who emphasized that the use of technology must be directed to improve students' critical thinking skills, not reduce them (Lasmiyatul et al., 2025). In addition, Hidayat et al.'s research shows that high academic pressure can change the learning orientation of students from deep learning towards surface learning. meanwhile, a study by Susanti highlights that

academic ethics have the potential to weaken when students focus more on completing assignments rather than understanding the process. These three studies are the first step to understand how deadline pressures can shape patterns of dependence on AI.

Various LMS (Learning Management System) activity reports show a pattern of accumulation of assignments in the final hours, reinforcing the picture that time pressure has become a major trigger for changes in students' academic behavior. This condition correlates with the increasing use of generative AI to complete tasks quickly, especially in students with high levels of procrastination. Prakoso & Dewi's research found that procrastination has a strong relationship with the tendency to take advantage of digital assistance instantly. Similar findings are reinforced by Widodo et al.'s research which reveals that the use of AI without control tends to reduce the

originality of works. In addition, research by Putri et al. shows that students often utilize automated platforms when facing tight deadline pressures. These empirical data make it clear that the problem that needs to be examined is not only the use of AI itself, but also academic behavior patterns triggered by time pressures so that AI is used as a way to quickly solve academic demands, not as a learning support tool.

The phenomenon of AI dependence due to deadline culture can be understood through several theories. Temporal Motivation Theory explains that time pressure increases the tendency to make quick decisions, including using AI as an instant solution. The Technology Acceptance Model outlines that students easily accept AI because it is considered practical and useful when facing deadlines. Meanwhile, the Self-Regulated Learning theory emphasizes that students with low self-regulation are more vulnerable to utilizing technology without critical control. These three theories provide a framework to understand why AI is not only used as an aid, but also as a substitute for thought processes. Thus, the analysis of academic behavior in this study is based on a combination of psychological, technological, and pedagogical theories to map the tendency to use AI more comprehensively.

This research is urgent because the adoption of generative AI is growing faster than academic regulation. Students are massively using AI to catch *up* on deadlines, while institutions do not have adequate guidelines. Vieriu stated that the uncontrolled use of AI can degrade the quality of deep learning approaches. Zhai's research shows the risk of degradation of critical thinking skills due to technology dependence. In addition, campus policymaking requires empirical data, not assumptions, so that interventions such as adaptive deadline design and AI use guidelines can be contextually relevant, as emphasized in Hasanah's thesis. Therefore, this study is important to provide a strong analytical basis so that educational institutions can formulate policies that are responsive to changes in students' academic behavior.

The previous five studies generally used surveys or perception reports in examining the use

of AI, so they did not touch much on aspects of digital behavior that were recorded temporally. Zhai's research only assessed dependency based on attitudes without linking it to deadline dynamics. Vieriu discussed the learning transformation caused by AI but did not examine the triggers. Alnasyan uses deep learning to predict academic performance, but has not linked it to interaction patterns with AI. This article offers a novelty in the form of integrating deadline-driven behavior analysis with log data using AI and deep learning models. In addition, this study presents a classification of dependency types and a simulation of two predictive policies that have not been found in previous studies.

The purpose of this study is to analyze how deadline culture encourages students to rely on AI as a quick strategy in completing tasks. The analysis is carried out through surveys and digital logs so that the phenomenon is seen empirically and objectively. Rahmawati emphasized the importance of understanding students' digital behavior as a whole to avoid perception bias. The second goal is to explore the potential of deep learning in mapping AI usage patterns, including interaction time, intensity, and anomalies that appear before deadlines. This approach allows for early detection of academic risks, as supported by Wang's research. This research is also directed to produce data-based policy recommendations as proposed by Nuryana.

Materials And Methods

This study uses a qualitative approach with a literature study type. This approach was chosen because it was able to provide a more complete picture of the relationship between deadline culture, students' habits of using AI, and how deep learning can be used to read their academic behavior patterns. In the process of collecting references, the researcher used one main primary data, namely the book *Deep Learning* by Ian Goodfellow, Yoshua Bengio, and Aaron Courville. This book was chosen because it provides a basic explanation of how deep learning models work in recognizing patterns, learning habits, and

processing data in layers. These principles are relevant to understanding how AI technology works and how the patterns of AI use by students can be analyzed more systematically.

Secondary data on research were obtained from national and international journal articles, scientific books, and research results that discuss students' dependence on technology, accelerating assignment completion through AI, and academic pressure due to deadlines. Literature searches were conducted through Google Scholar, Scopus, and Sinta with keywords such as *deadline culture*, *AI dependency*, *student academic behavior*, and *deep learning in education*. Once collected, all sources were analyzed using content analysis techniques to find key themes and relationships between deadline pressure, AI usage patterns, and the possible application of deep learning models in mapping students' academic behavior. Through this method, the research is expected to be able to provide a clear picture of how these phenomena are interrelated in the context of higher education in the digital era.

Results and Discussion

Results

The analysis conducted in this study presents a number of important findings that illustrate how students interact with technology in the midst of modern academic pressure. This research departs from two main focuses: first, how deadline culture shapes patterns of students' dependence on AI; and

second, how deep learning is able to map patterns of academic behavior that arise from these conditions. Behind these two major focuses, there is a series of other dynamics that are interconnected and enrich understanding of the relationship between academic pressure, learning patterns, and how students utilize technology. The narrative of the findings will further outline the picture, showing how different aspects of academic behavior influence each other in the digital ecosystem they face today.

Analysis of the Deadline Culture Phenomenon on Student Dependence on AI

The phenomenon of deadline culture has a significant influence on the academic behavior patterns of students, especially in terms of the increasing use of artificial intelligence as a strategy to deal with time pressure. All of the findings obtained illustrate how students respond to increasingly dense academic demands through the use of AI, both as a tool to accelerate assignment completion and as a cognitive support when independent thinking skills begin to decline. In addition, the results of the analysis also revealed that the use of AI in this context not only affects students' learning goals, but also produces an ambivalent impact on their academic quality. Thus, the following series of research results provides an in-depth overview of the dynamics of interaction between academic pressure, patterns of AI utilization, and its implications for student learning integrity.

Table 1. Findings Related to Deadline Culture and Student Dependence on AI.

| Key Findings | Description |
|---|--|
| Deadline culture triggers acceleration of AI adoption | College students are more likely to use AI in the hours leading up to deadlines. |
| Time pressure drives shifting learning objectives | The focus of learning changes from understanding the material to completing the task as quickly as possible. |
| The emergence of a pattern of cognitive dependence (cognitive offloading) | The thought process is transferred to AI so that independent reasoning is reduced. |
| Ambivalent impact on academic quality | Productivity increases but academic integrity weakens. |
| AI is seen as a savior when academic conditions are squeezed | Students make AI an emergency solution when they are stressed about assignments. |

In this study, it was revealed that deadline culture significantly triggering the acceleration of the use of AI among students. Survey data shows that most college students access AI tools more often a few hours before the due date, as a strategy to get work done on time. This finding is supported by Lukman's research in 2025 which states that 90.7% of students use AI in academic contexts in response to deadline pressures (Lukman et al., 2025). In addition, Kurniasari's research in 2025 also reports that although AI provides efficiency, many students feel dependent on AI to complete tasks quickly (Kurniasari et al., 2025).

Furthermore, the analysis shows that the time pressure in deadline culture encourage the emergence of patterns cognitive offloading, where students leave part of the analytical thinking process to AI. As deadlines approach, they tend to use AI to generate a framework of initial answers, ideas, and even arguments, which then reduce reflective engagement independently. This pattern was reinforced by the 2024 Albab study that found that AI "addiction" is associated with decreased learning independence, as students rely more on machines to compile task analysis than deep thinking (Albab et al., 2024).

The results also indicate the ambivalent effects of AI dependence: on the one hand, student productivity increases as AI speeds up assignment completion, but on the other hand, academic integrity and originality of thought are threatened. Not a few students stated that they use AI as a "savior" when they are under high academic

pressure, so that AI is not only a tool but a kind of "thought support." Ulfah's research in 2024 confirms these findings by showing that a high reliance on AI can reduce students' analytical and creative capacity (Ulfah, 2024). Meanwhile, a report from the University of Medan Area (2025) warns that AI dependence like this can pose a long-term risk to the quality of graduates if it is not balanced with the regulatory policy of using AI on campus (Darmansyah, 2025).

Application of Deep Learning in Academic Behavior Analysis

The application of deep learning in academic behavior analysis provides a deeper picture of how students interact with technology, especially AI, when facing lecture demands. Through the ability to map usage time patterns, deep learning reveals students' tendency to use AI ahead of deadlines, as well as identify the types of tasks that most trigger such use. In addition, this approach is able to model the intensity and frequency of students' digital activities, making it easier for researchers to read the level of academic pressure they face. Further analysis also shows that deep learning can detect the motives behind digital behavior, such as efficiency, time pressure, or the fear of failure. Not only that, but this technology also opens up opportunities to identify potential academic risks, especially related to over-reliance on AI. All of these findings provide an important foundation before presenting the results of the study in more detail in the following table.

Table 2. Findings Related to the Application of Deep Learning in Academic Behavior Analysis.

| Key Findings | Description |
|---|--|
| Deep learning is able to map the time pattern of AI use | College students are more likely to use AI in the hours leading up to deadlines. |
| Identify the types of tasks that most trigger the use of AI | Essay and summary assignments are the category with the highest use of AI. |
| Behavioral modeling based on intensity and frequency of use | The frequency of AI use indicates the level of academic stress of students. |
| Disclosure of students' digital behavior motives | The model detects efficiency motives, time pressure, and failure concerns. |
| Potential early detection of academic risks | Deep learning can map students with a high risk of AI dependence. |

In the analysis of the application of deep learning to understand students' academic behavior, this study found that deep learning models are able to clearly map the time pattern of AI use. The data shows that AI use is particularly intense in the hours leading up to deadlines, and predictive models based on deep learning can identify such spikes in activity. These findings are in line with Suherwin's 2025 study that built an AI-based system to analyze students' digital activities in LMS, including login frequency and interaction time, although the focus is more on learning style than AI dependency (Suherwin et al., 2025). In addition, Sukarna's 2024 study states that the use of machine learning-based prediction models (including deep learning) in academic contexts must pay attention to ethics and data privacy so that student behavior can be ethically mapped (Sukarna et al., 2024).

The second finding shows the identification of the types of tasks that most trigger the use of AI. The deep learning model in this study classifies that essay assignments and concept summaries are the task types with the highest use of AI. This indicates that college students tend to use AI when they are faced with open-ended assignments and analyze structures, rather than just filling in static answers. These findings are relevant to Wulandari's 2025 research in *Amal Ilmiah*, which identifies student learning styles as the basis for the application of deep learning methods, shows that academic patterns can be mapped using student characteristic data (Wulandari et al., 2025).

In addition, this study found that deep learning can also capture the motives of students' digital behavior, such as efficiency, time pressure, and fear of failure. The model built is able to detect these motif clusters based on the intensity and frequency of AI use, which opens up opportunities to detect the risk of academic dependency early. These findings are supported by the 2024 Jubaedah study in *COSMOS: Jurnal Ilmu Pendidikan, Ekonomi dan Teknologi*, where the authors use deep learning to detect students' learning styles by analyzing their digital data interaction patterns, showing that deep learning is effective in uncovering motivations and learning habits (Jubaedah, 2024). In addition, Hermawan's research in 2024 highlights that deep

learning systems (DLS) in education can be used to predict learning behavior and adapt to personalized learning, although there are challenges related to bias and transparency (Hermawan et al., 2024).

Discussion

Analysis of the Deadline Culture Phenomenon on Student Dependence on AI

1. **Deadline Triggers Acceleration of AI Adoption**
Deadline culture creating high time pressure conditions that result in students looking for the fastest solution in completing assignments. As deadlines approach, students often experience increased anxiety, decreased focus, and limited time to engage in the ideal learning process, such as exploring context, analyzing arguments, or articulating ideas independently. In this situation, the use of AI is one of the options because it is considered capable of generating ideas, texts, or frameworks instantly compared to manual thinking processes. This shows that indirectly students prioritize completing assignments rather than deepening the material. So that deadline can act as a trigger for changes in academic behavior towards the use of technology quickly and pragmatically (Ulfah, 2024).
2. **Time Pressure Drives Shifting Learning Goals**
When students are in a state of rush of time, the learning orientation is no longer on understanding the context but on completion output. This makes students view AI not as a learning support tool, but as a kind of "task production machine" that functions to generate answers quickly and practically. This shift in perception shows that students increasingly prioritize efficiency over substantial cognitive processes. The learning process becomes shallow because students tend to skip the reading-comprehension stage, but go straight to producing answers. Causally, time pressure is the main factor that reduces the space for reflection, so that the capacity for critical thinking is reduced. Time constraints then encourage students to choose shortcuts in the form of using AI to get results quickly (Zhang et al., 2024).

3. The Emergence of Cognitive Dependency Patterns (cognitive offloading)

The transfer of the thinking process to AI occurs because students repeatedly ask AI for suggestions, structures, and initial arguments. This dependence on initial help makes students less and less likely to start the analysis process, so that their cognitive role slowly shifts from independent thinking activities to choosing, editing, or modifying activities output generated by AI. In the long run, AI becomes a "cognitive support" that takes over part of the information processing function so that analytical capabilities decline. As students approach deadlines, the tendency to offloading This is even stronger because time pressure increases students' desire to obtain quick solutions. This condition accelerates the formation of a pattern of dependence, where students find it difficult to complete assignments without AI intervention (Zhai et al., 2024).

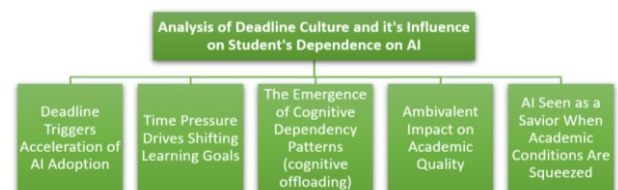
4. Ambivalent Impact on Academic Quality

AI has great potential to increase student productivity because this technology allows the completion of many tasks in a relatively short time. With the help of AI, students can generate a writing outline, material summary, or initial argument instantly. However, there are consequences to this effectiveness. The speed and convenience offered are often accompanied by a decrease in the level of originality of ideas and a weakening of students' critical thinking processes. This double impact occurs because students copy or modify more often output AI without deep analysis. In the short term, the quality of the assignment appears to improve because the structure of the writing is neater and the arguments are more organized. But in the long run, students' academic abilities have the potential to decline because they are no longer trained to formulate original ideas, think analytically, or develop arguments based on personal understanding (Bećirović et al., 2025).

5. AI Seen as a Savior When Academic Conditions Are Squeezed

In high-pressure conditions, students tend to look for solutions that are fast, reliable, and

have a low risk of error. In this context, AI is the choice that is considered to best meet all these needs. The speed of response, consistency of the quality of answers, and the ability to generate various forms of information make AI positioned as an effective "way out" when students feel pressured by deadlines and the accumulated workload. This perception depends not only on the function of AI, but also on the psychology of students who feel helped emotionally and cognitively. Many college students feel that AI provides a sense of security, reduces anxiety, and offers reassurance when they are unsure of their own thinking capacity. AI not only helps cognitively, but also provides emotional support in the form of a feeling that they are not working alone in the face of heavy academic pressure. Therefore, AI is not just a technological tool, but acts as a coping mechanism with academic stress (Bećirović et al., 2025).



Application of Deep Learning in Academic Behavior Analysis

1. Deep Learning Is Able to Map the Time Pattern of AI Use

Deep learning work by analyzing patterns that emerge from student activity data systematically and repeatedly. Through the ability to process large amounts of data, the model deep learning can recognize behavioral regularity that is not always visible. One of the most consistent patterns is the tendency of college students to use AI intensely ahead of deadlines. When the frequency of use increases suddenly at a certain hour or day, the model deep learning can extract such information and form a stable representation of patterns. This process is possible because deep learning processes timestamp, frequency of access, duration of interaction, and intensity of requests made by students to AI. Through layered learning the model can quickly recognize that

there is a spike in those parameters as the deadline approaches (Solahudin, 2024).

2. Identify the types of tasks that most trigger the use of AI

Academic assignments in the form of essays, summaries, or reviews usually require thinking skills, such as argument construction, in-depth understanding of the material, information synthesis, and clear and coherent language formulation. Tasks with such open-ended characteristics require longer time and more intense cognitive engagement than multiple-choice tasks or numerical tasks that are structured and have definite answers. This makes students more vulnerable to seeking external help, including through the use of AI, to speed up the process of drafting ideas, stringing paragraphs, or drafting basic arguments. Causally, this relationship can be explained through the degree of openness of the task structure, the wider the interpretation and creativity space required by a task, the greater the opportunity for students to use AI as a preparation tool (Hastuti et al., 2025).

3. Behavioral Modeling Based on Intensity and Frequency of Use

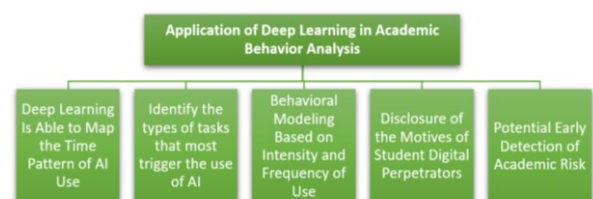
Deep learning is able to identify and connect patterns of increased use of AI to academic moments that are considered critical, such as approaching assignment collection deadlines. The model works by studying patterns that appear repeatedly, including increased usage in a short period of time, higher frequency of access than usual, as well as changes in the rhythm of interactions as academic load increases. When usage patterns show a consistent spike at a certain time, it is understood as the academic pressure that students are experiencing. The intensity of AI use serves as an indirect indicator of students' psychological conditions. Through the mapping of digital behavior patterns, deep learning can assess that students tend to rely on AI assistance when facing situations that demand quick completion or when the complexity of tasks increases (Kamaruddin et al., 2025).

4. Disclosure of the Motives of Student Digital Perpetrators

Deep learning models do not have the ability to read human motivation directly, as motivations are internal, subjective, and not always explicitly reflected in the data. However, the model can reveal digital motif through the process of grouping behavior patterns that appear consistently during the student's use of AI services, e.g. fast, repetitive, and at the end of time, showing efficiency motives or pressure to complete tasks instantly. Through the process of behavioral clustering, deep learning is able to distinguish groups of patterns that exhibit certain tendencies, such as "panic ahead of deadline" behavior, "automation for efficiency" behavior, or "long-term dependence" behavior. Although the model does not know the actual psychological reason, inferences regarding the motive can be made based on the consistency of the pattern (Jayatri et al., 2025).

5. Potential Early Detection of Academic Risk

Deep learning can serve as an early detection tool for academic risk due to its ability to recognize complex, repetitive, and statistically significant patterns of behavior. When a college student shows an extreme tendency to use AI, the model will identify the pattern as an indicator of dependency risk. Ability *Deep Learning* In detecting risks, it arises because the model can integrate various variables simultaneously. Variables such as the time of use, duration of interaction, the type of task being done, the characteristics of student responses, and the consistency of patterns over time were analyzed simultaneously. By combining these variables, the model produces more accurate risk predictions than manual analysis (Yumna et al., 2024).



Conclusions

This study concludes that deadline culture plays a major trigger for students' increasing dependence on AI, which can be seen through the acceleration of the use of this technology ahead of deadlines, the shift in learning objectives from comprehension to task completion, and the emergence of cognitive offloading patterns which weakens the independence of thinking. AI provides convenience and efficiency, but at the same time produces ambivalent impacts in the form of increased productivity but decreased academic integrity and the quality of students' cognitive processes. In addition, this study shows that deep learning is effective as an analytical tool to map students' academic behavior patterns, including the intensity of AI use, types of dependency-triggering tasks, digital behavioral motives, and potential academic dependency risks. Through the ability to identify complex patterns, deep learning opens up opportunities for more adaptive academic supervision and early detection of risky learning behaviors. Overall, these findings underscore the need for wise regulation and literacy of the use of AI in the educational environment so that technology remains a means of supporting, not a substitute for students' cognitive function.

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References

- Albab, U., Rahmawati, I., Ananda, R., Adha, M. F., Putra, S. R., & Pahlepi, R. (2024). ARTIFICIAL INTELLIGENCE ADDICTION TERHADAP KEMANDIRIAN BELAJAR PADA MAHASISWA BAHASA DAN SASTRA ARAB. *Jurnal Ilmu-Ilmu Kependidikan Dan Bahasa Arab*, 12(2), 307–318.
- Bećirović, S., Polz, E., & Tinkel, I. (2025). Exploring students' AI literacy and its effects on their AI output quality, self-efficacy, and academic performance. *Smart Learning Environments*, 12(1), 29. <https://doi.org/10.1186/s40561-025-00384-3>
- Darmansyah, S. (2025). *Risiko Ketergantungan Mahasiswa pada AI dalam Menyelesaikan Tugas*. Puskarsa.Uma.Ac.Id. <https://puskarsa.uma.ac.id/2025/08/28/risiko-ketergantungan-mahasiswa-pada-ai-dalam-menyelesaikan-tugas/>
- Hastuti, S., Ansar, A., & Hermawan, N. (2025). Penerapan Teknologi Deep Learning Dalam Pendidikan Digital. *Jurnal Penelitian Ilmu Pendidikan Indonesia*, 4(2), 359–365.
- Hermawan, B. M., Hakim, M. A., Arifin, R., & Puspitasari, N. (2024). PEMANFAATAN ARTIFICIAL INTELLEGENCE, KHUSUSNYA MECHINE LEARNING DAN DEEP LEARNING SYSTEM DALAM PENDIDIKAN. *SEMINAR NASIONAL AMIKOM SURAKARTA (SEMNAS) 2024*, 4(1), 1–10.
- Jayatri, S. N., Safitri, D., & Sujarwo. (2025). Tantangan dan Peluang Penggunaan Deep Learning Dalam Pembelajaran IPS di Era Digital. *Jurnal Sosial Dan Humaniora*, 2(4), 30–43.
- Jubaedah, S. (2024). Pemanfaatan Deep Learning Untuk Mendeteksi Dan Menganalisis Gaya Belajar Siswa. *COSMOS: Jurnal Ilmu Pendidikan, Ekonomi Dan Teknologi*, 1(6), 635–646.
- Kamaruddin, I., Ismawirna, I., Malintang, J., Utami, T., Sapulete, H., & Wardono, B. H. (2025). Integrasi Deep Learning dalam Kurikulum Berdampak: Transformasi Pendidikan Tinggi di Era Digital. *Jurnal Penelitian Ilmu Pendidikan Indonesia*, 4(3), 1949–1957.
- Kurniasari, P., Mardikaningsih, A., & Sari, R. S. (2025). Dependensi Penggunaan Kecerdasan Buatan AI (Artificial Intelligence) Terhadap Tugas Akademik Mahasiswa. *JUPEIS: Jurnal Pendidikan Dan Ilmu Sosial*, 4(3), 604–612.
- Lasmiyatul, I., Sukaesih, F., Nazelia, D. A., Auliya, S., Alam, N., Hariri, Y. M., Suresman, E., Pendidikan, A., Pendidikan, I., Islam, A., Indonesia, U. P., History, A., & License, I. (2025). KOMUNIKASI DAKWAH SUNAN KALIJAGA: ANALISIS KUALITATIF TERHADAP PENYAMPAIAN PESAN ISLAM MELALUI SENI DAN BUDAYA. *TASHDIQ: Jurnal Kajian Agama Dan Dakwah*, 13(2).
- Lukman, K. R., Pamungkas, R. T., Bano, D. V. S., & Rachman, A. (2025). Ketergantungan Mahasiswa Pada AI: Apakah Teknologi AI Mengurangi Semangat Belajar Mahasiswa? *Prosiding Seminar Implementasi Teknologi Informasi Dan Komunikasi*, 4(1), 359–365.
- Solahudin, W. (2024). Penerapan Deep Learning dalam Pendidikan di Indonesia: Tantangan dan Peluang Implementasi Teknologi Pendidikan. *Jurnal Ilmu Pendidikan*, 1(1), 48–55.
- Suherwin, Rachmat, Said, I., & Asia, S. N. (2025). Pembangunan Sistem AI Berdasarkan Analisis Aktivitas Digital Untuk Mengidentifikasi Gaya Belajar Siswa. *Journal of Artificial Intelligence and Digital Business (RIGGS)*, 4(2), 3117–3122.

- Sukarna, R. H., Hlilah, Damyati, F., & Hilman, M. (2024). ANALISIS PREDIKSI KELULUSAN MAHASISWA TEPAT WAKTU MENGGUNAKAN METODE ALGORITMA MACHINE LEARNING DAN FEATURE SELECTION. *UNBAJA: Jurnal Ilmiah Sains Dan Teknologi*, 8(2), 232–241.
- Ulfah, M. (2024). Dampak Ketergantungan pada Artificial Intelligence Terhadap Kemampuan Analitis dan Kreatif Mahasiswa. *VOX EDUKASI: Jurnal Ilmiah Ilmu Pendidikan*, 15(1), 120–130.
- Wulandari, T. S. H., Mizan, S., Wiratsiwi, W., Agustin, I., Saraswati, T. D., & Refani, N. E. (2025). Identifikasi Gaya Belajar sebagai Dasar Penerapan Metode Deep learning dalam Proses Pembelajaran. *Amal Ilmiah : Jurnal Pengabdian Kepada Masyarakat*, 6(2), 193–202.
- Yumna, Y. S. H., Bukhori, M. W., Giyaatsusshidqi, M., & Agustina, N. (2024). Implementasi Penggunaan AI Dalam Proses Pembelajaran Mahasiswa Teknologi Pendidikan Angkatan 2023. *Jurnal Pendidikan Transformatif*, 3(2), 50–55.
- Zhai, C., Wibowo, S., & L, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review. *Smart Learning Environments*, 11(28), 1–37.
- Zhang, S., Zhao, X., Zhou, T., & Kim, J. H. (2024). Do you have AI dependency? The roles of academic self-efficacy, academic stress, and performance expectations on problematic AI usage behavior. *International Journal of Educational Technology in Higher Education*, 21(34), 1–14.

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