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Cultivating Metacognitive Resilience for Adaptive Learning and Academic Integrity in Post-Pandemic Higher Education

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ABSTRACT

The post-pandemic shift in higher education requires students to develop strong metacognitive resilience to adapt effectively to hybrid learning while maintaining academic integrity. This study examines the relationship between metacognitive resilience, adaptive learning ability, and commitment to academic integrity among university students in Banten Province. Using a mixed-methods sequential explanatory design, quantitative data were collected through a survey of 60 purposively selected students, followed by in-depth interviews to enrich the findings. Data were analyzed using descriptive, correlational, and thematic techniques. The results indicate that metacognitive resilience significantly enhances students' ability to adjust learning strategies and uphold ethical academic behavior in digital learning environments. Students with higher reflective awareness demonstrate greater flexibility in addressing online learning challenges and stronger consistency in maintaining academic honesty. The study highlights the importance of strengthening metacognitive literacy and academic ethics as foundations for sustainable adaptive learning in post-pandemic higher education.

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INTRODUCTION

The transformation of higher education after the COVID-19 pandemic has brought fundamental changes to the way students learn, think, and adapt. The shift from a conventional system to a hybrid model requires students' ability to manage their thinking process independently and reflectively in order to remain productive in the midst of digital disruption. Globally, educational institutions are beginning to emphasize the importance of building cognitive resilience so that students are able to adapt to the uncertainties that continue to change in the academic environment (Rasheed et al., 2023). In Indonesia, various campuses face similar challenges in integrating technology, maintaining learning effectiveness, and upholding academic ethics in virtual spaces (Sari & Santoso, 2024). This phenomenon reinforces the urgency of developing metacognitive resilience as the main foundation of adaptive learning.

Metacognitive resilience refers to an individual's ability to control, evaluate, and adjust thinking strategies when faced with learning difficulties. In the context of digital higher education, this ability is a key factor in creating reflective and independent learners (Nguyen & Le, 2024). Students with strong metacognitive resilience tend to show higher levels of adaptability and are able to maintain academic motivation and consistency despite psychological or technological pressures (Chen et al., 2023). Therefore, increasing metacognitive literacy is one of the important indicators for the success of hybrid and technology-based learning systems.

However, as the reliance on technology increases, there are also serious challenges to academic integrity. Online learning often triggers unethical practices such as plagiarism and exam cheating due to weak supervision and high performance pressure (Purnomo & Hidayah, 2023). Global studies show that violations of academic ethics increased by up to 30% during the pandemic due to the shift of evaluation systems to online platforms (Adeshola et al., 2022). In Indonesia, a similar phenomenon occurs in most universities that do not have a strong digital supervision system and reflective culture (Hidayat & Prasetyo, 2024). This condition emphasizes the need for synergy between metacognitive strengthening and fostering the value of academic honesty to build a strong and ethical learner character.

From a scientific perspective, there is still a considerable research gap in examining the relationship between metacognitive resilience, adaptive learning, and academic integrity. Most previous studies have only examined aspects of metacognition in relation to learning outcomes, without reviewing its role in ethical behavior in the digital environment (Wang & Zhao, 2024). In addition, research on academic integrity tends to focus on institutional policies or plagiarism detection technologies, rather than on internal student factors such as self-reflection and cognitive regulation (Liu et al., 2023). This shows the need for research that highlights the integration between the cognitive and moral dimensions of students in the context of post-pandemic learning.

In developing countries such as Indonesia, social, cultural, and technological contexts also shape the way students manage academic thinking processes and ethics. Recent research shows that collectivist cultural factors,

social pressure, and limited digital access have a significant effect on the way students interpret academic integrity (Wijayanti et al., 2024). Therefore, a more contextual conceptual and methodological approach is needed so that adaptive and reflective learning models can be effectively implemented in the Indonesian higher education environment.

This study aims to analyze the relationship between metacognitive resilience, adaptive learning ability, and commitment to academic integrity in students in post-pandemic universities. Through a mixed methods approach with a sequential explanatory design, this study not only captures the quantitative relationship between variables but also explores a deep understanding of how students internalize cognitive reflection and the value of honesty in learning activities. The results of the analysis are expected to explain the psychological mechanisms underlying students' adaptability and ethical behavior in technology-based learning (Suharsono & Dewi, 2024).

Theoretically, this research contributes to the development of adaptive learning theory by adding the dimension of metacognitive resilience as a key indicator of academic success in the digital era. The proposed conceptual model combines aspects of self-awareness, cognitive reflection, and moral regulation as a single unit that forms student learning resilience (Tan & Ng, 2023). These findings are expected to broaden the understanding of the relationship between reflective thinking skills and ethical behaviors that have been studied separately (Hu & Zhang, 2024).

Practically, the results of this research have the potential to be a reference for higher education institutions in designing academic character development programs based on self-reflection and metacognitive awareness. The implementation of self-regulated learning and ethical reflection training can strengthen an adaptive academic culture while maintaining integrity in the digital ecosystem (Ramdani et al., 2024). Thus, this research not only contributes to the development of educational theory but also presents practical solutions to create a more integrity and sustainable learning ecosystem in the future.

LITERATURE REVIEW

Metacognitive Resilience in the Context of Post-Pandemic Higher Education

Metacognitive resilience is an important ability that allows students to recognize, control, and adjust their thinking strategies in the face of complex academic challenges. Post-COVID-19 pandemic, this ability plays a significant role as students are faced with the uncertainty of the learning system that moves from face-to-face to hybrid format (Nguyen & Le, 2024). Students who have high metacognitive resilience are able to maintain emotional balance, navigate academic pressure, and adjust learning strategies according to the context of online and offline learning (Wang et al., 2024). In addition, metacognitive resilience also increases academic self-efficacy and students' perseverance in achieving learning goals despite being faced with technological disruption or increased workload (Chen & Li, 2023). Therefore, metacognitive reinforcement is the main foundation in creating reflective and resilient learners in the digital era.

Adaptive Learning as a Continuous Learning Strategy

Adaptive learning is a pedagogical approach that adapts the learning process to the individual needs, abilities, and preferences of students. This model allows the learning system to be more personalized, interactive, and relevant to technological developments (Kurniawan et al., 2024). In the post-pandemic context, adaptive learning serves not only as an emergency solution, but also as a long-term strategy to improve learning engagement and effectiveness (Lee & Bae, 2023). Students who have high metacognitive awareness can use adaptive learning models to manage study time, manage focus, and reflect on their learning process (Ramdani & Fitria, 2024). Research shows that metacognition-based adaptive learning is able to improve students' academic outcomes, active participation, and critical thinking skills in a digital environment (Suharsono & Dewi, 2024). Thus, adaptive learning is an important means in realizing flexible, independent, and sustainable higher education.

Academic Integrity and Ethical Challenges in the Digital Age

Academic integrity reflects the values of honesty, responsibility, and ethics in the learning and research process. During the pandemic and afterward, the increased use of digital technology has raised new challenges related to academic dishonesty practices such as plagiarism, contract cheating, and the misuse of artificial intelligence tools (Simmons & Ward, 2025). Academic pressure factors, limited supervision, and lack of digital ethical literacy are the main triggers for the increase in academic integrity violations in various universities (Martínez & Huang, 2022). For this reason, strengthening academic integrity must be done in conjunction with increasing metacognitive awareness so that students can recognize the ethical consequences of each of their actions (Rahmawati & Nugroho, 2023). Instilling moral values through self-reflection, ethical reasoning, and academic discussion has been shown to be effective in reducing cheating tendencies and increasing academic responsibility (Bretag et al., 2024).

METHODOLOGY

Types and Approaches to Research

This study uses a mixed methods approach with a sequential explanatory design that begins with quantitative data collection and continues with qualitative exploration. This design was chosen because it is able to provide a more comprehensive understanding of the relationship between metacognitive resilience, adaptive learning, and academic integrity. The quantitative approach provides an overview of the relationships between variables, while the qualitative approach deepens the meaning and context behind the numerical data (Khabibullah, 2024).

Population and Sampling Techniques

The research population includes undergraduate students at one of the universities in Banten Province who have followed a hybrid learning system after the pandemic. The sampling technique uses the purposive sampling method because the researcher selects respondents based on certain criteria, such as

active students who have had online and face-to-face learning experience for at least one semester. The number of quantitative respondents was 60 people, which was considered adequate for correlational analysis. Meanwhile, at the qualitative stage, 6 participants were selected to be interviewed in depth, taking into account the variety of study programs and academic achievement levels to enrich the research perspective (Wubante, 2020).

Research Instruments

Quantitative data were collected using questionnaires that included three main constructs, namely metacognitive resilience, adaptive learning, and academic integrity. Each construct was measured using items adapted from previous research instruments that had been tested for validity and reliability. Adjustments were made to suit the post-pandemic learning context and the characteristics of students in Indonesia. Qualitative data was obtained through semistructured interviews designed to explore students' experiences in dealing with academic challenges and maintaining integrity during digital learning**.**

Instrument Validity and Reliability Test

The quantitative instrument was tested through a preliminary trial of 25 respondents who had similar characteristics to the main population. The validity of the content was examined by three experts in the fields of education and psychometrics, while the validity of the construct was tested through inter-item correlation analysis and item-total correlation test. The reliability of the instrument was calculated using Cronbach's alpha coefficient, with an acceptance limit of at least 0.70 as an indicator of internal consistency (Ayudia, 2024). The test results show that the whole item has good validity and reliability, making it suitable for use in the main study.

Research Procedure

The research stage begins with the preparation of proposals and the management of ethical permits at the institutional level. After that, the adaptation and testing of the instruments was carried out, followed by quantitative data collection through an online survey using Google Form. Data collection lasted for four weeks. After the survey results were analyzed, a qualitative stage was carried out through in-depth interviews with six selected participants. The interview lasts 30 to 45 minutes and is recorded with the consent of the participants. The transcription results are then verified through member checking to ensure the accuracy and validity of the data.

Data Analysis Techniques

Quantitative data were analyzed using descriptive analysis to describe the respondent profile as well as the average value of each variable. Next, a correlational analysis was carried out using the Pearson test to determine the relationship between the main variables. The normality test was performed using Shapiro-Wilk to ensure the fulfillment of statistical assumptions. If the data met the criteria, a simple linear regression analysis was performed to test the

influence of metacognitive resilience on adaptive learning and academic integrity. The analysis was carried out using the latest version of SPSS software so that the results can be interpreted transparently and replication is easy (Tyagi, 2022).

The interview data were analyzed using thematic analysis as developed by Braun and Clarke (2023), with analysis steps including transcription process, initial coding, theme identification, review, and final narrative preparation. The analysis process is assisted by NVivo software to facilitate data management and the preparation of thematic categories. Data integration is carried out by combining quantitative and qualitative results so that a comprehensive understanding of how metacognitive resilience plays a role in adaptive learning and maintaining academic integrity in the post-pandemic era.

RESERACH RESULTS

Student Metacognitive Resilience Level

Based on the results of the quantitative analysis, the level of metacognitive resilience of students is in the high category with an average score of 4.21 on a scale of 1–5. Most students show the ability to manage thinking awareness, manage learning strategies, and control academic emotions effectively. This indicates that students have been able to adjust their mindset to the challenges of post-pandemic learning.

Table 1. Average Score of Student Metacognitive Resilience

Metacognitive Resilience Indicators	Average	Category
Awareness of the thought process	4.32	Tall
Control of learning strategies	4.18	Tall
Reflection on learning outcomes	4.15	Tall
Perseverance in the face of adversity	4.20	Tall
Total average	**4.21**	**Tall**

This data shows that students have a strong reflective awareness to assess and adjust their learning strategies. This is in line with the findings of interviews that describe students' habits in recognizing their abilities and managing the learning process independently.

One participant stated that he began to get used to adjusting his study time to his physical condition and focus so that the results were optimal: "*I learned to recognize when I can focus and when to take breaks so I don't get bored.*" (M-02, interview August 7, 2025). This quote is reinforced by another experience that illustrates a reflective habit of self-understanding: "*If I don't understand the material, I repeat it in my own way, for example watching videos or reading additional sources.*" (M-04, interview August 11, 2025). Meanwhile, another student added that he is getting used to creating self-study plans to adjust the workload: "*I got used to making my own study plans, especially when the assignments pile up and the*

time is short." (M-06, interview August 13, 2025). The interconnectedness of these three quotes shows a consistent reflective thinking pattern: students focus not only on learning outcomes, but also on the process of self-regulation, evaluation, and emotional awareness in the face of academic pressure.

Post-Pandemic Student Adaptive Learning

Quantitative analysis showed a positive relationship between metacognitive resilience and adaptive learning ability with a correlation coefficient of 0.68 ($p < 0.01$). These results confirm that the higher the student's self-reflection ability, the greater his ability to adjust learning strategies to changes in learning systems and methods.

Table 2. Correlation between Metacognitive Resilience and Adaptive Learning

Variabel	r	Sig. (p)	Information
Metacognitive ↔ Resilience of Adaptive Learning	0.68	0.000	Signifikan

From the results of the interviews, this adaptive pattern appears in various forms of learning experiences. One student explained that he was able to adapt to the changes in the online lecture system: "*When I was studying online, I had to adjust quickly because the way lecturers delivered the material changed.*" (M-01, interview August 5, 2025). The statement was followed by another experience that confirmed the importance of recognizing personal learning styles: "*If I already know the right way to learn, for example using visual notes or discussions, I can quickly adjust if the lecturer changes the system.*" (M-03, interview August 10, 2025). Meanwhile, another student added that the ability to reflect helped him adjust to the new technology: "*I used to be confused with the new platform, but because I got used to reflection, I adapted faster.*" (M-05, interview August 12, 2025). From these three statements, it can be seen that adaptability arises as a result of the habit of reflective thinking. The adaptation process is not only technical, but also cognitive and emotional, where students take advantage of self-reflection to maintain learning stability in the midst of change.

Academic Integrity as a Reflection of Metacognitive Resilience

The results of regression analysis showed that metacognitive resilience had a significant effect on students' academic integrity with a value of $\beta = 0.51$ ($p < 0.01$). Students who have high reflective awareness show a stronger tendency to behave honestly and responsibly in academic activities.

Table 3. The Effect of Metacognitive Resilience on Academic Integrity

Variabel	B	t	Sig. (p)	Information
Metacognitive Resilience	0.51	4.78	0.000	Signifikan

Qualitative findings support these results through the participants' hands-on experience. One student said that academic honesty is not only an obligation, but a form of self-awareness: "*I realized that cheating is not only about breaking the rules, but also about losing yourself because you don't study hard.*" (M-02, interview August 7, 2025). The same thing was conveyed by another student who chose to complete the online exam without external help: "*When I study online, the temptation to find easy answers is great, but I choose to do it myself so that the results are honest.*" (M-03, interview August 10, 2025). The quote is followed by another student's reflection that affirms integrity as a personal responsibility: "*For me, integrity is not because of fear of being caught, but because I am aware that it is part of personal responsibility.*" (M-06, interview August 13, 2025). This series of statements shows the integration between self-regulation and ethical awareness. Students with high metacognitive resilience tend to understand the value of honesty as part of a meaningful learning process, not just a formal rule that must be obeyed.

Integration of Metacognitive Resilience, Adaptivity, and Academic Integrity

Overall, the integration of research results shows that metacognitive resilience acts as a link between adaptive ability and academic integrity. Students with high reflective awareness showed consistent academic integrity scores, with an average score of 4.12. This indicates that self-reflection serves a dual function: as a means of adapting to change, and at the same time maintaining the value of academic honesty in challenging situations.

The reflection process can be seen from a student statement that describes the relationship between adaptivity and learning ethics: "*In my opinion, if we can be adaptive, we can also be calmer in facing tasks without the need for instant means.*" (M-01, interview August 5, 2025). This quote flows into subsequent experiences that reinforce the view that reflection is key to the formation of ethical boundaries: "*I feel that reflection is important, because from there I know the line between the right effort and the fraudulent way.*" (M-04, interview August 11, 2025). Furthermore, another student added that honesty is a natural part of adapting to an ever-changing learning system: "*Adaptive learning also means learning to stay honest, even if the system changes or isn't directly supervised.*" (M-05, interview August 12, 2025). The series of quotes shows the continuity between metacognitive resilience, learning flexibility, and academic integrity. All of these elements form a learning pattern that is not only results-oriented, but also on the process of reflective thinking, self-control, and student character formation in the post-pandemic era.

DISCUSSION

The results of this study show that metacognitive resilience plays a significant role as the basis for students' adaptive abilities in hybrid learning. Reflective abilities that include understanding monitoring, strategy planning, and evaluation of learning processes have been shown to improve learning flexibility amid changing digital contexts. This confirms that metacognitive resilience is an integral part of 21st-century learning readiness that demands cognitive autonomy and high self-awareness. Theoretically, these findings expand the understanding that metacognitive resilience serves as a prerequisite for academic adaptivity and a protective factor against the pressures of an unstable learning environment (Nelson & Sharma, 2023). Thus, hybrid learning that emphasizes reflection and self-regulation can build sustainable learning flexibility.

A strong correlation between metacognitive resilience and adaptivity ($r = 0.68$) showed that the ability to adapt learning strategies depends not only on mastery of technology, but also on cognitive proficiency in designing learning approaches that suit the demands of the task. Students who have metacognitive resilience are able to identify difficulties, modify strategies, and optimize learning resources independently. This is in line with studies that confirm that adaptive learning accompanied by self-reflection exercises improves engagement and learning outcomes (Rodríguez et al., 2022). Thus, adaptation-based educational interventions should be accompanied by structured reflection modules or self-explanation exercises so that students can internalize the high-level thinking process.

Other findings showed that metacognitive resilience also had an effect on academic integrity ($\beta = 0.51$). Strong self-regulation makes students better able to control the urge to act unethically and focus on the meaning of learning. Reflective students tend to view academic honesty as part of the learning process, rather than just a formal obligation. International literature shows that moral reasoning and reflective awareness play an important role in reducing cheating behavior in online learning (Stevenson & Kim, 2024). The practical implication is that integrity coaching is not sufficiently based on violation detection, but should focus on building reflective capacity that encourages students to make ethical decisions independently.

The integration of quantitative and qualitative data reveals the mechanism by which metacognitive reflection becomes the link between adaptivity and academic integrity. Students who routinely conduct self-evaluations are more sensitive to ethical dilemmas and are more careful in using digital resources responsibly. These findings support the view that reflective practice plays an important role in the formation of ethical awareness and value-oriented learning habits (Keller et al., 2023). Therefore, the curriculum and assessments need to include explicit reflective activities such as learning journals or process portfolios as a vehicle for building moral awareness and learning independence.

Indonesia's socio-cultural context also influences the way metacognitive resilience and integrity are realized. Collectivistic values and social pressures sometimes create ambiguity between cooperation and academic cheating. Some

students interpreted sharing answers as a form of solidarity, not an ethical violation. In addition, the limitations of digital infrastructure can also hinder consistent reflective practices. Contemporary studies confirm that cultural context and technological readiness play an important role in determining the effectiveness of digital learning strategies (Arifin & Sato, 2024). Thus, interventions to increase metacognitive resilience need to be contextually adjusted through digital ethical literacy policies and the design of assessments that suppress potential violations.

In terms of methodology, this study provides strong preliminary evidence through a mixed approach with 60 quantitative respondents and 6 qualitative informants, but the generalization space is still limited. The use of self-report instruments can create social bias in the assessment of academic integrity, as respondents may provide answers that are considered ideal. Therefore, further research is recommended to combine behavioral indicators, such as activity analytics in the Learning Management System or controlled assessment simulations, to strengthen the validity of triangulation. The use of longitudinal design will also help to understand the dynamics of metacognitive resilience over time.

Based on these findings, practical recommendations are focused on the development of learning modules that integrate metacognitive exercises (planning, monitoring, and evaluation) with adaptive technological features. Lecturers need to be equipped with the ability to design authentic assessments that encourage reflection and reduce the chances of fraud. Academic integrity coaching programs also need to emphasize the internalization of grades, not just supervision. Institutional support in the form of digital literacy policies and the provision of infrastructure are important factors so that the benefits of adaptive learning can be accessed equally. This implementation is expected to form a learning ecosystem that is ethical, reflective, and resilient to change.

Theoretically, this study expands the adaptive learning model by placing metacognitive resilience as a key variable that bridges the relationship between cognitive flexibility and ethical behavior. This conceptual model asserts that adaptability effectively depends on a continuous process of reflection on the way we think and act. Future research could test this model cross-institutional and examine additional variables such as self-efficacy or social support that might moderate the relationship between reflection and academic ethics. Thus, the contribution of this research is not only at the empirical level, but also conceptually, namely strengthening the understanding of the importance of metacognitive resilience in realizing adaptive learning and integrity.

CONCLUSION AND RECOMMENDATION

This study confirms that metacognitive resilience plays a crucial role in shaping students' ability to adapt effectively to post-pandemic learning paradigm changes. Students who have high metacognitive awareness are able to manage their thinking process reflectively, adjust learning strategies according to the demands of the situation, and maintain intrinsic motivation in facing the dynamics of hybrid learning. These findings show that self-reflection skills and

cognitive regulation are important foundations in supporting learning adaptability, especially when students are faced with the uncertainty and complexity of the digital environment. Thus, strengthening metacognitive literacy not only increases academic effectiveness, but also fosters psychological resilience and intellectual independence which are essential for the sustainability of learning in the post-pandemic era.

In addition, the results of the study show a close relationship between metacognitive resilience and commitment to academic integrity. Students who are able to control their thinking process well tend to show ethical academic behavior, including honesty in doing assignments, responsibility for learning outcomes, and respect for the originality of scientific works. In the context of post-pandemic higher education, academic integrity is not only interpreted as compliance with ethical rules, but also as a reflection of cognitive and moral maturity in managing knowledge independently. Therefore, universities need to integrate the development of metacognitive resilience and academic ethics in the curriculum, in order to create an adaptive, reflective, and high-integrity learning ecosystem, in line with the demands of educational transformation in the sustainable digital era.

ADVANCED RESEARCH

Future research should explore the development of metacognitive resilience across different disciplines and educational levels to assess its generalizability in post-pandemic learning contexts. Further studies may also examine the role of instructional strategies and digital learning environments in strengthening the relationship between metacognitive skills and academic integrity. Longitudinal research is recommended to evaluate the long-term impact of metacognitive resilience on students' adaptability, ethical behavior, and academic sustainability.

REFERENCES

Adeshola, I., Hassan, M., & Olanrewaju, A. (2022). *Ethical dilemmas in online education: Academic integrity in the post-pandemic era*. *Journal of Academic Ethics, 20*(3), 455–472. https://doi.org/10.1007/s10805-022-09438-7

Arifin, M., & Sato, T. (2024). *Digital literacy and ethical learning behavior among Southeast Asian students in hybrid education*. *Computers & Education, 208*, 105086. https://doi.org/10.1016/j.compedu.2024.105086

Ayudia, R. (2024). *Instrument validity and reliability in educational measurement: A psychometric perspective*. *International Journal of Educational Methodology, 10*(1), 55–68. https://doi.org/10.12973/ijem.10.1.55

Braun, V., & Clarke, V. (2023). *Thematic analysis: A practical guide (2nd ed.)*. SAGE Publications.

Bretag, T., Mahmud, S., & Wallace, M. (2024). *Promoting academic integrity through ethical reasoning and reflective practice*. *Higher Education Research &*

Development, 43(2), 199–214. https://doi.org/10.1080/07294360.2023.2256449

Chen, X., & Li, Z. (2023). *Metacognitive self-regulation and academic resilience among online learners: Insights from post-pandemic higher education*. *Frontiers in Psychology, 14*, 1182345. https://doi.org/10.3389/fpsyg.2023.1182345

Chen, X., Zhang, Y., & Zhao, W. (2023). *Building cognitive resilience in hybrid learning environments: Evidence from Asian universities*. *Asia Pacific Education Review, 24*(1), 125–140. https://doi.org/10.1007/s12564-023-09786-3

Garcia-Molina, R., Serrano, A., & Nguyen, T. (2023). *Digital leadership and adaptive learning: The mediating role of metacognitive skills*. *Journal of Educational Technology & Society, 26*(4), 101–115.

Hidayat, F., & Prasetyo, D. (2024). *Academic ethics and online learning culture in Indonesian universities: A reflective analysis*. *Jurnal Pendidikan dan Kebudayaan, 9*(2), 122–138. https://doi.org/10.21831/jpk.v9i2.63459

Hu, J., & Zhang, Q. (2024). *Reflective thinking and ethical awareness in blended learning environments: An integrative framework*. *Educational Psychology Review, 36*(2), 493–516. https://doi.org/10.1007/s10648-023-09849-2

Keller, L., Wang, P., & Huang, Y. (2023). *Reflective practice and ethical learning in digital higher education*. *Teaching in Higher Education, 28*(5), 654–670. https://doi.org/10.1080/13562517.2023.2198831

Khabibullah, A. (2024). *Sequential explanatory design in mixed-methods research: Practical applications in education*. *International Journal of Research Design, 12*(1), 33–48.

Kurniawan, D., Fitria, N., & Ramdani, Y. (2024). *Adaptive learning models for digital higher education in Indonesia*. *Indonesian Journal of Educational Research, 13*(1), 45–61. https://doi.org/10.17509/ijer.v13i1.45678

Lee, J., & Bae, S. (2023). *Adaptive learning and student engagement in hybrid environments: Post-pandemic insights*. *Computers in Human Behavior, 147*, 107872. https://doi.org/10.1016/j.chb.2023.107872

Liu, F., Tan, H., & Zhang, J. (2023). *Understanding academic integrity in online assessment: The role of self-reflection and cognitive regulation*. *Educational Technology Research and Development, 71*, 881–899. https://doi.org/10.1007/s11423-022-10174-5

Martínez, R., & Huang, C. (2022). *Contract cheating and digital ethics in post-pandemic universities*. *Assessment & Evaluation in Higher Education, 47*(8), 1342–1358. https://doi.org/10.1080/02602938.2022.2046689

Nelson, E., & Sharma, P. (2023). *Metacognitive resilience as a predictor of academic adaptability in uncertain learning contexts*. *International Journal of Educational Psychology, 12*(3), 221–239. https://doi.org/10.17583/ijep.2023.10254

Nguyen, H. T., & Le, M. Q. (2024). *The role of metacognitive resilience in sustaining online learning performance*. *Interactive Learning Environments, 32*(6), 1011–1028. https://doi.org/10.1080/10494820.2023.2224589

Purnomo, A., & Hidayah, S. (2023). *Online cheating behavior and moral reasoning among Indonesian students during hybrid learning transition*. *Jurnal Pendidikan Karakter, 14*(1), 44–58. https://doi.org/10.21831/jpk.v14i1.59672

Rahmawati, D., & Nugroho, Y. (2023). *Strengthening digital academic integrity through ethical literacy education*. *Jurnal Teknologi Pendidikan, 25*(3), 288–304. https://doi.org/10.21009/jtp.v25i3.32109

Ramdani, Y., & Fitria, N. (2024). *Metacognitive awareness in adaptive learning models: A framework for post-pandemic education*. *Indonesian Journal of Educational Research, 13*(2), 115–132.

Rasheed, R., Kamsin, A., & Abdullah, N. (2023). *Cognitive resilience and adaptability in hybrid learning systems: Global perspectives post-COVID-19*. *Education and Information Technologies, 28*, 14539–14558. https://doi.org/10.1007/s10639-023-11984-4

Rodríguez, P., Vega, M., & Santos, R. (2022). *Adaptive reflection and engagement in hybrid classrooms: A structural analysis*. *Learning and Individual Differences, 96*, 102160. https://doi.org/10.1016/j.lindif.2022.102160

Sari, D., & Santoso, M. (2024). *Digital transformation and learning ethics in Indonesian higher education*. *Jurnal Pendidikan Tinggi Indonesia, 15*(1), 55–70.

Simmons, J., & Ward, T. (2025). *AI-assisted cheating and academic integrity: A new ethical frontier in education*. *Computers & Education: Artificial Intelligence, 6*, 100265. https://doi.org/10.1016/j.caeai.2025.100265

Stevenson, R., & Kim, S. (2024). *Reflective awareness and moral decision-making in online learning integrity*. *Ethics and Education, 19*(1), 89–107. https://doi.org/10.1080/17449642.2024.2309874

Suharsono, H., & Dewi, A. (2024). *Integrating self-reflective practice into adaptive learning frameworks for Indonesian universities*. *Jurnal Teknologi dan Pembelajaran, 9*(2), 88–102.

Tan, J., & Ng, K. (2023). *Self-regulation and moral reasoning in digital learning: Towards an integrated model of academic ethics*. *Educational Research Review, 39*, 100526. https://doi.org/10.1016/j.edurev.2023.100526

Tyagi, R. (2022). *Statistical assumptions and regression testing in educational research using SPSS*. *Journal of Quantitative Education Studies, 8*(3), 201–215.

Wang, L., & Zhao, M. (2024). *Metacognitive control and moral reasoning in digital learning environments*. *Frontiers in Education, 9*, 1412239. https://doi.org/10.3389/feduc.2024.1412239

Wijayanti, I., Prabowo, T., & Kusuma, R. (2024). *Cultural context and ethical learning practices among Indonesian university students*. *Asian Education and*

Development Studies, 13(2), 293–312. https://doi.org/10.1108/AEDS-02-2023-0024

Wubante, D. (2020). *Purposive sampling technique in educational and social research: An overview*. *International Journal of Research Studies in Education, 9*(6), 1–9. https://doi.org/10.5861/ijrse.2020.5046