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AI in Higher Education: A Case Study Examining Decision-Making Shifts and Personalised Learning Through Educators' Perspectives

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Abstract

Examining educators' perspectives on integrating artificial intelligence (AI) into higher education, this qualitative investigation focuses on decision-making processes and AI-driven personalised learning. Through semi-structured interviews with seven experienced educators from the humanities (including art) and sciences, nine themes emerged in three categories: pedagogical implications, operational considerations, and ethical-professional dimensions. The findings point towards a hybrid model where AI manages routine tasks whilst educators retain pedagogical authority. Although educators did not perceive AI-driven personalised learning as a direct threat to comprehensive education, they highlighted the significance of careful implementation to maintain academic integrity and critical thinking abilities. Key implications for curriculum development, policy reform, and professional development stress the importance of maintaining human judgement. These insights present practical recommendations to effectively include AI whilst preserving the irreplaceable human elements in educational pedagogies.

Keywords: Academic Integrity, Artificial Intelligence in Education, Pedagogical Decision-Making, Personalised Learning, Professional Development

Preface

My engagement with AI and education emerged from firsthand classroom observations, where I witnessed how thoughtfully integrated technology could transform learning experiences and engage students in meaningful ways. A significant turning point came during the COVID-19 pandemic, when the Ministry of Education of Brunei Darussalam provided laptops and tablets with data credits to students from disadvantaged backgrounds at my workplace. Through direct observation of this initiative, I discovered that meaningful educational technology integration requires access to digital tools and structured development of essential digital literacy skills.

This study examines teachers' firsthand experiences with AI in their classrooms, whilst reflecting my commitment to creating an inclusive AI-enriched learning environment. Their insights are crucial for understanding the effective implementation of educational technology.

1. Introduction

Artificial intelligence (AI) integration in education involves a substantial, complex progression that creates significant advantages and presents identifiable difficulties. AI transforms educational methodologies by improving efficiency and personalised learning experiences, as well as redefining administrative functions. Related technologies can provide significant support to AI applications. Integrating AI technologies into educational methodologies is emphasised by Selwyn (2022) as he advocates for a thoughtful examination of their anticipated outcomes and impacts. Arvin et al. (2023) also stress how AI can influence educational administration, which enhances teaching and learning processes.

AI integration can create advanced teaching and learning tools which enhance student comprehension and engagement. Zouhri and El Mallahi (2024), who study both AI and related educational technologies, explore how AI transforms teaching approaches, improving learning outcomes. This integration enables dynamic educational environments where students receive real-time feedback, effectively connecting theoretical knowledge with practical application. AI's analytical capabilities facilitate personalised learning experiences and optimise administrative processes (Popenici & Kerr, 2017; Begum, 2024).

AI integration in higher education raises ethical concerns. Addressing academic integrity, algorithmic biases, and the implementation of emerging technologies is necessary as this preserves educational values whilst taking advantage of technological developments. Eysenbach (2023) addresses the crucial need for transparency in algorithmic functions and advocates for fairness in their practical application, whilst Barua et al. (2022) caution that an intensified dependence on AI may detrimentally influence students' critical thinking and could possibly diminish their skill proficiency. Park and Kwon (2024) assert that promoting digital equity and accessibility is essential in adopting new educational technologies because unequal access could disadvantage specific learners.

Therefore, ethical considerations are prominent. The frameworks that regulate technological applications must adapt and ensure that new applications remain relevant and practical. Chen et al. (2023) assert the significance of establishing ethical guidelines to address the potential risks that may emerge from the influence of AI in educational contexts. Xusheng and Komolafe (2020) urge educators to integrate modern instructional methodologies that facilitate collaboration between technological innovations and human thought processes. This shift demands reevaluating teaching practices to ensure educators remain effective and relevant in influencing AI capabilities for educational purposes (Walter, 2024).

Although AI offers valuable benefits, it creates issues that require thorough examination. This study aims to enrich a continuous discussion on the responsible implementation of this technology and advocates a balanced approach that realises its educational advantages whilst alleviating potential drawbacks.

1.1. *Aim and Purpose*

The aim is to analyse the viewpoints of higher education educators regarding the role of artificial intelligence in pedagogies, the benefits and challenges of its integration, and their perceptions of the ethical issues that arise within educational contexts. The study will consider how AI applications in education can be effectively integrated into higher education pedagogies. By understanding educators' lived experiences and bridging the gap between theoretical possibilities and practical implementation, this study aims to generate insights that can inform professional development frameworks and curriculum design for more effective AI integration in higher education.

1.2. *Rationale*

This research addresses three crucial gaps in understanding AI integration in higher education. First, whilst studies have examined AI's technical implementation, limited research explores educators' lived experiences with AI-enhanced teaching. Second, though AI's potential for personalised learning receives attention, only some studies examine how this affects comprehensive education delivery. Third, the shift in educational decision-making prompted by AI requires thorough investigation from educators' viewpoints.

The focus on educators' perspectives is significant as they directly encounter the changes AI introduces to teaching and learning processes. Their insights uncover practical challenges and opportunities that may need to be more apparent in theoretical frameworks. Moreover, their experiences highlight the balance between AI-driven efficiency and maintaining meaningful human interaction in education. Their perspectives on decision-making processes assist in identifying areas where AI can enhance rather than substitute human judgement. Understanding these aspects proves essential as educational institutions increasingly adopt AI technologies. The findings will help inform policy development, professional training programmes, and implementation strategies for AI in higher education.

1.3. Research Questions

Based on these rationales, the study addresses two primary questions:

RQ1. How does AI integration shift the balance of decision-making in higher education teaching?

This question examines changes in pedagogical authority and decision-making processes. It explores how educators adapt their teaching approaches with AI support, whilst investigating the balance between automated and human-led educational decisions.

RQ2. Do educators view AI-driven personalised learning as a threat to comprehensive education?

This question explores tensions between personalisation and broad educational goals. It examines educators' views on maintaining educational quality with AI integration, whilst investigating strategies for balancing individualised learning with collective educational experiences.

2. Literature Review

This review explores five areas essential to understanding AI integration in higher education. First, it investigates the foundational elements of artificial intelligence and augmented reality in education. Second, it analyses teacher preparation requirements for effective AI implementation. Third, it evaluates infrastructure requirements crucial for AI integration. Fourth, it considers digital equity issues affecting AI adoption. Fifth, the literature review links existing studies to the study's aims, stressing its significance and identifying knowledge gaps. These five areas as follows outline a structured flow in exploring the views of the participants.

2.1. Artificial Intelligence

2.1.1. Foundation and Impact on Teaching Methods

AI represents a groundbreaking innovation that presents new opportunities for teaching and learning (Huang et al., 2024; Dwivedi et al., 2021). AI enables computational systems to learn and self-correct, supporting pedagogical decision-making and enriching educational experiences. Whilst related technologies like augmented reality (AR) can complement AI in some contexts by enhancing environmental perception through digital information overlay, AI remains the primary driver of educational transformation (Makhataeva, 2023).

AI has become a powerful tool for transforming teaching methods, offering innovative approaches to personalised instruction (Kırıkkaya & Başgöl, 2019). Research demonstrates the effectiveness of these technologies in improving student engagement through interactive content (Dhar et al., 2021). Selwyn (2022) emphasises the significance of including AI technologies in educational settings, urging thoughtful examination of potential consequences. Arvin et al. (2023) highlight AI's significant impact on educational institution management, possibly leading to better teaching and learning outcomes. Zouhri and El Mallahi (2024) explore how AI transforms teaching approaches, demonstrating measurable improvements in learning outcomes.

2.1.2. AI-Driven Learning Enhancement and Collaboration

AI creates immersive educational environments that extend beyond traditional learning approaches. Barua et al. (2022) demonstrate how AI technologies analyse student performance patterns to personalise content delivery. In complementary research, Zouhri and El Mallahi (2024) explore AI applications, including those that may incorporate AR elements for interactive visualisations. These studies show how AI transforms educational experiences—adapting content difficulty to individual learning needs whilst enhancing comprehension through various digital interfaces. AI-driven systems provide contextual, just-in-time information that converts passive observation into active engagement with educational materials.

Collaborative learning environments benefit from AI integration, though Schemmer et al. (2022) identify specific challenges related to user trust and system interpretation. Their research reveals that students initially question the reliability of AI-generated feedback, requiring transparent explanations of algorithmic processes to build confidence. Despite these hurdles, their findings demonstrate that properly implemented AI tools can enhance peer collaboration by identifying optimal group formations based on complementary skills and learning preferences.

AI's analytical capabilities extend beyond individual student support to transform institutional processes. Popenici and Kerr (2017) identify how predictive analytics can anticipate resource needs and optimise scheduling, whilst Begum (2024) examines AI's role in automating administrative workflows that previously consumed significant teaching time. These operational efficiencies allow educators to reallocate attention to high-value interactions with students, fundamentally changing how educational institutions function.

Effective learning enhancement through technology requires systematic institutional approaches. Chan (2023) emphasises the importance of establishing clear frameworks for technology integration that align pedagogical goals with technological capabilities. This structured approach contrasts with Kennedy's (2023) focus on infrastructure requirements, arguing that even well-designed frameworks cannot succeed without robust technical support systems. These perspectives highlight how learning enhancement through AI depends on conceptual frameworks and practical implementation considerations.

2.2. *Implementation and Support Framework*

2.2.1. Technical Infrastructure and Resources

The successful integration of AI in education requires thoughtful consideration of technological infrastructure. Chan (2023) provides a comprehensive AI policy framework highlighting the importance of operational infrastructure and training support. Moldavan et al.'s (2021) research reveals how educators navigate technological challenges, emphasising the need for reliable access and consistent technical support.

Resource planning plays a crucial role in successful implementation. Hashim et al. (2022) examine institutional approaches to technology integration, demonstrating how strategic resource allocation supports successful initiatives. Begum (2024) explores how robust technical support structures facilitate AI adoption, whilst Kamalov et al. (2023) examine how administrative processes evolve with AI implementation, highlighting the need for sustained resource commitment.

2.2.2. Professional Development and Training

Educators require comprehensive training and ongoing professional development to integrate AI effectively. Rueda and Batanero's (2022) research emphasises the importance of enhanced ICT professional development for addressing diverse learner needs. Weisberg and Dawson (2023) highlight how pre-service teacher education programmes can integrate technological capabilities. Walter (2024) suggests educators need both a theoretical understanding of AI and practical skills in its application.

Assessment strategies must evolve alongside AI implementation. Khan (2023) explores adapting traditional assessment methods to AI-enhanced environments whilst maintaining academic integrity. Gobniece and Titko (2024) examine developing competencies for evaluating student work in digital contexts, whilst Chen et al. (2023) propose frameworks for maintaining assessment quality with AI tools.

2.2.3. Change Management and Implementation Strategies

The transition to AI-enhanced teaching environments suggests careful change management. Xusheng and Komolafe (2020) emphasise evolving educator roles in technology-driven environments. Zouhri and El Mallahi (2024) examine quality-focused adaptations in teaching practices, whilst Arvin et al. (2023) provide insights into effective transition strategies. Kennedy (2023) shows how enhanced ICT infrastructure can support teacher education.

Ibrahimi (2024) suggests pedagogical development might enhance ICT implementation. Huang et al. (2024) examine how teacher enthusiasm affects technology adoption, whilst Gyawali and Mehndroo (2024) explore opportunities for navigating digital transformation.

These professional development considerations inform implementation frameworks, which must address both technical and pedagogical needs. Arvin et al. (2023) provide insights into effective transition strategies, whilst Kennedy (2023) shows how enhanced ICT infrastructure can support teacher education. Their findings emphasise the importance of comprehensive support systems that address AI implementation's technical and pedagogical aspects.

2.3. Pedagogical Considerations

2.3.1. Assessment Strategies

The evolution of AI technologies requires new approaches to assessment whilst maintaining academic integrity. Khan (2023) explores how traditional assessment methods can adapt to AI-enhanced environments, emphasising the need to balance technological innovation with academic standards. Gobniece and Titko (2024) examine developing competencies for evaluating student work in digital contexts, especially when verifying authentic student learning.

Digital assessment strategies must address both technical capabilities and educational quality. Chen et al. (2023) propose frameworks for maintaining assessment integrity with AI tools, whilst Eysenbach (2023) emphasises the need for transparent algorithmic processes in assessment and analytics.

2.3.2. Skills Enhancement

The integration of AI technologies into educational contexts requires developing skill sets among teachers and students. Rueda and Batanero's (2022) research highlights how strengthened digital literacy capabilities significantly contribute to addressing varied student learning requirements. Their work emphasises practical approaches to technology implementation across different learning contexts.

A contrasting perspective emerges from Barua et al. (2022), who raise concerns regarding how AI tools might potentially undermine students' ability to think independently. Their findings suggest that overreliance on technological assistance could diminish analytical reasoning, especially when students become dependent on AI-generated solutions without understanding underlying principles. This tension highlights why educators need balanced pedagogical strategies that include technological advantages whilst preserving fundamental cognitive development.

In related work, Walter (2024) stresses the importance of developing twin competencies: understanding AI systems and maintaining robust analytical thinking. Walter's research examines how these skills complement each other in

technology-rich learning environments. Likewise, Huang and colleagues (2024) investigate how teachers' confidence and positive attitude towards technology significantly influence successful classroom technology adoption. Their study revealed correlations between teacher motivation and the effective integration of technology across various educational settings.

2.3.3. Educational Quality Assurance

Maintaining educational quality requires a careful analysis of numerous factors. Park and Kwon (2024) address the issues of digital equality and accessibility, arguing for the urgent implementation of inclusive frameworks in AI applications. However, this perspective contrasts with Xusheng and Komolafe (2020), who stress that educators' roles in technology-driven settings are evolving, whilst proposing alternative educational methodologies to uphold quality whilst embracing innovation.

Quality assurance also integrates the assessment of ethical issues in AI use. Chen et al. (2023) support strong ethical frameworks in AI-enhanced education. This differs from Eysenbach's (2023) emphasis on the significance of algorithmic fairness and transparency. Zouhri and El Mallahi (2024) illustrate that successful AI adoption requires a balance between new technologies and established pedagogical practices to uphold educational standards.

The merging of AI with traditional teaching methods presents opportunities to improve educational quality. Popenici and Kerr (2017) investigate how AI can enhance teaching and learning processes whilst preserving academic standards. Begum (2024) looks into the role of AI in facilitating quality education delivery, stressing the need for maintaining human oversight in educational practices.

2.4. Digital Equity and Access

2.4.1. Access and Opportunity Gaps

Digital equity remains a central concern as AI technologies become integral to educational practices. The digital divide affects technological access and learning opportunities (Lutz, 2019). Moldavan et al. (2021) highlight how variations in technology access among teachers affect instructional effectiveness, whilst Prodani et al. (2020) demonstrate how equitable access to digital technologies enhances learning outcomes across different socioeconomic contexts.

2.4.2. Impact on Educational Development

Park and Kwon (2024) explore how equitable AI implementation supports comprehensive student development. Their findings align with Rana et al.'s (2021) study of rural teachers in Nepal, revealing opportunities for targeted technology support in underserved educational settings. Weisberg and Dawson (2023) demonstrate how equity pedagogy can effectively integrate with AI advancement to support inclusive education.

2.4.3. Support Strategies

Research indicates that addressing digital equity requires collaborative solutions. Chen et al. (2023) and Hashim et al. (2022) stress the importance of community participation and institutional approaches in reinforcing digital inclusion efforts, especially in applying AI technologies across various educational environments.

2.5. Research Gaps and Literature Relevance

2.5.1. Identified Research Gaps

The reviewed literature reveals several important gaps in the current understanding. Firstly, whilst Dhar et al. (2021) demonstrate AI's effectiveness for student engagement, longitudinal research tracking its effects on student

development over multiple years remains markedly absent. Secondly, Barua et al. (2022) examine AI in education broadly, yet research specifically investigating how AI integration varies across academic disciplines, especially in the creative arts and humanities, is significantly limited. Thirdly, although Rueda and Batanero (2022) discuss the importance of digital competencies, they provide insufficient exploration of the specific professional development requirements for educators transitioning to AI-enhanced teaching environments. Moreover, the current literature inadequately addresses how traditional assessment methods should evolve in response to AI integration, especially concerning the verification of authentic student work and the evaluation of critical thinking skills.

2.5.2. Foundation for Current Research Questions

The literature reviewed addresses this study's two primary research questions about AI's impact on decision-making and personalised learning in higher education. Barua et al.'s (2022) work shows how AI-enabled tools influence instructional decisions, whilst Zouhri and El Mallahi (2024) highlight AI's transformative impact on educational decision-making processes. Kamalov et al. (2023) demonstrate how AI shifts administrative tasks towards strategic initiatives, and Hashim et al. (2022) show the movement towards data-informed teaching decisions.

On personalised learning and comprehensive education, Kırıkkaya and Başgöl (2019) demonstrate improved student engagement through technology integration, whilst Barua et al. (2022) caution about the effects on critical thinking skills. Gobniece and Titko (2024) raise concerns about academic integrity, whereas Gyawali and Mehndroo (2024) and Popenici and Kerr (2017) highlight adaptive learning benefits. Research on teacher preparation (Rueda & Batanero, 2022; Weisberg & Dawson, 2023) and infrastructure challenges (Chan, 2023; Moldavan et al., 2021) provide context for understanding educator perspectives. Studies by Khan (2023) and Gobniece and Titko (2024) emphasise the challenge of balancing personalised learning with academic integrity.

This literature review highlights the need to investigate educator perspectives on AI's role in decision-making and personalised learning directly, supporting this study's aims whilst addressing identified gaps in current research.

3. Methodology

Braun and Clarke's (2012) thematic analysis framework guided the identification of patterns and themes from participant responses.

3.1. Research Design

A qualitative methodology was chosen to explore educators' experiences and perceptions regarding AI integration in teaching practices. This approach allowed for a detailed examination of participants' views on decision-making processes and personalised learning in AI-enhanced educational environments.

3.2. Participants and Sampling

3.2.1. Selection Criteria

Purposive sampling was employed to select participants with experience using or overseeing AI-driven learning technologies. Participants were recruited via email invitations from Brunei's educational institutions known for their established AI initiatives. The selection criteria included current educators with a minimum of 10 years of teaching experience, direct experience using AI in teaching methods, and familiarity with ethical concerns related to AI in education.

3.2.2. Sample Characteristics

The final sample comprised seven educators—five female and two male—aged 37 to 46. Three held Master's degrees, and four had completed doctoral studies. Their teaching experience spanned 10-18 years, with four from humanities (including language teaching and arts education) and three from science disciplines (including mathematics).

3.3. Data Collection

The study's design centred on five significant areas: academic integrity in AI-enhanced education, AI's contribution to administrative efficiency, the influence of data-driven insights on teaching methodologies, AI's role in personalised learning, and associated ethical considerations. These areas formed the foundation for subsequent thematic analysis. Interview sessions were held in chosen quiet settings, with prior consent for audio recording obtained, and the conversations were transcribed verbatim. Field notes supplemented recordings to capture critical points for exploration.

3.4. Data Analysis

The analysis followed Braun and Clarke's (2012) six-step thematic analysis approach. This process began with familiarisation with data through multiple transcript readings, followed by generation of initial codes. The next steps involved searching for themes, reviewing themes, defining and naming themes, and finally, report production.

This systematic process resulted in nine themes, organised into three categories. The first category, pedagogical implications, encompassed critical thinking concerns, over-reliance on AI, and personalised learning. The second category, operational considerations, included administrative efficiency, data insights, and human judgement alongside AI. The third category, ethical and professional dimensions, comprised academic integrity, ethical concerns, and changing educators' roles.

4. Findings and Data Interpretation

Insights gained from semi-structured interviews revealed educators' views on AI integration in enhancing teaching practices in higher education. Nine themes were discerned and organised into three main categories: ethical-professional dimensions, operational considerations, and pedagogical implications. Each category signifies the role of AI in teaching that focuses on a variety of benefits and challenges connected to its adoption.

4.1. Pedagogical Implications

4.1.1. Critical Thinking Concerns

Concerns about the retention of critical thinking skills in an AI-enhanced educational environment have been frequently articulated by educators. A primary concern was students' overreliance on AI-generated content (Participant 1), especially with respect to their proficiency in evaluating information critically. In science education, emphasis was placed on developing fundamental reasoning skills (Participant 3), with AI viewed as a support tool rather than a replacement for cognitive development. Similar concerns emerged in art teaching (Participant 7), where spontaneity and real-time adaptation were deemed essential skills that technology could not adequately replicate.

4.1.2. Over-reliance on AI

The risk of students becoming passive learners emerged as a significant concern. Participants expressed worry that excessive AI dependence might hinder independent thinking development. When examining science instruction, data collected revealed concerning patterns where students excessively dependent on AI tools showed diminished

capacity to solve problems independently. As Participant 3 explained, students often bypassed crucial analytical development by relying on AI-generated solutions rather than working through problems methodically. This observation underlines why structured, sequential learning remains essential for developing authentic comprehension of scientific concepts.

Likewise, perspectives from art education highlighted complementary concerns. Participant 7 specifically emphasised that students need exposure to unexpected creative challenges—situations where predetermined solutions are not readily available. Their observations suggest that whilst AI can effectively customise individual learning experiences, it potentially deprives students of formative struggles that naturally cultivate adaptability and persistence. These qualities, the participant noted, are especially vital in artistic disciplines where innovation often emerges from navigating constraints.

4.1.3. Personalised Learning

Whilst acknowledging AI's potential for personalisation, educators identified tensions between adapted learning and comprehensive education. Most participants recognised benefits but expressed caution about maintaining educational breadth. Participant 4, from a science background, emphasised the need to balance AI's ability to adapt to individual learning paces with developing collaborative skills through peer interactions, especially in laboratory settings. Participant 6 observed that whilst AI could provide personalised feedback on grammar and vocabulary in language teaching, authentic communication skills required human interaction. The limitations of AI-driven personalisation were especially evident in performance-based disciplines, where real-time adaptation and spontaneity were deemed essential to the learning process.

4.2. Operational Considerations

4.2.1. Administrative Efficiency

The integration of AI in administrative tasks revealed a complex balance between efficiency and personal engagement. Basic administrative functions, such as assignment management and grading, demonstrated clear benefits in time-saving (Participant 1), allowing educators to focus on meaningful student interactions. The science classroom provided insights into how AI could effectively track concept progression (Participant 3), though educators emphasised the continued importance of personal review for understanding student thinking processes. Whilst acknowledging AI's utility in structuring feedback and planning (Participant 7), educators consistently stressed the need to maintain human oversight of these processes.

These findings directly illustrate how AI integration shifts decision-making processes in higher education. The interviews revealed a multifaceted approach to administrative responsibilities in AI-enhanced environments. Participant 1 described how AI systems efficiently manage time-consuming tasks such as preliminary assignment evaluation, yet emphasised that teachers deliberately retain final authority over assessment outcomes. This deliberate distribution of responsibilities creates what might be described as a complementary relationship—AI handles repetitive procedural elements whilst human expertise guides evaluation strategies. In discussing this relationship, Participant 3 offered additional insights. They described how shifting basic administrative tasks to AI systems creates space for teachers to concentrate on intricate teaching choices. Such decisions, according to this participant, rely heavily on the educator's expert knowledge and their unique understanding of how each student progresses. Throughout the interviews, a common perspective emerged - rather than seeing technology as a substitute for human expertise, the participants viewed AI as an enabling instrument. This tool, they suggested, strengthens their capacity to engage with the intellectually challenging elements of teaching that cannot be automated.

4.2.2. Data-Driven Insights

A marked shift appeared from data-driven to data-informed decision-making approaches.

Whilst educators recognised the value of AI-generated data, they consistently emphasised the need for human interpretation in its application. Some educators expressed caution about the limitations of purely numerical analysis (Participant 2), stressing the importance of focusing on qualitative aspects of education. The humanities perspective revealed how AI could effectively identify writing patterns (Participant 5), though evaluating the depth and quality of academic arguments remained firmly within the domain of human expertise. In art education, initial scepticism about AI data's relevance gave way to appreciating its utility (Participant 7), especially in monitoring student engagement across various artistic media.

4.2.3. Human Judgement Alongside AI

The integration of AI insights with human judgement emerged as crucial for effective teaching. Educators viewed AI as a tool to enhance rather than replace human decision-making. Participant 4 emphasised that performance patterns identified by AI represented only part of the educational narrative. From a science teaching perspective, Participant 3 highlighted how human expertise was essential in understanding the conceptual barriers behind computational difficulties that AI might identify. The value of AI in detecting patterns in student progress was noted in art education (Participant 7), although this participant also maintained that this technology should complement rather than lead the design of personalised challenges for creative development.

4.3. *Ethical and Professional Dimensions*

4.3.1. Academic Integrity

The evolution of AI tools has challenged traditional concepts of academic integrity, creating new complexities in maintaining educational standards. Educators pointed out the complexities involved in verifying authentic student work. Humanities educators emphasised that plagiarism detection applications must address current challenges because the focus has changed from recognising copied content to scrutinising the authenticity of intellectual processes.

The impact varied across disciplines, with science educators prioritising understanding of underlying principles over merely obtaining correct numerical results, whilst arts educators struggled with assessing creative processes when AI tools are employed in the ideation phase.

The distinction between AI-assisted versus AI-dependent activities has surfaced as a critical factor in creative disciplines. Participants acknowledged altering their assessment strategies, opting for in-class evaluations instead of take-home assignments that emphasise the necessity of real-time critical thinking.

Process-based evaluation has gained prominence, with educators requiring documentation that illustrates students' thinking processes through their drafts and subsequent revisions. This change signifies a transformation in the concept of academic integrity and its enforcement in modern higher education.

4.3.2. Ethical Concerns

Beyond academic integrity, AI integration in education presents distinct ethical challenges. Research participants highlighted data protection concerns in AI-enabled learning systems, supporting Chen et al.'s (2023) call for robust ethical frameworks. The necessity for transparent algorithmic processes in assessment and analytics emerged as crucial, aligning with Eysenbach's (2023) emphasis on algorithmic fairness. Educators noted potential risks in AI-based student profiling, echoing Park and Kwon's (2024) research on equity and access challenges in technological implementation.

4.3.3. Changing Educator Roles

The adoption of AI in education has fundamentally redefined educators' professional responsibilities and identity, corroborating the claims made by Xusheng and Komolafe (2020) regarding the critical need to evolve with new pedagogical approaches.

The participants described a transformation from traditional teaching roles to becoming facilitators in AI-enhanced learning environments. This reflects Walter's (2024) emphasis on the importance of AI literacy and analytical thinking in current educational pedagogy. This transition required developing new skill sets whilst ensuring the retention of educational expertise, as reflected in Rueda and Batanero's (2022) research on the growth of digital competence.

Science educators reported adapting their instructional approaches to emphasise conceptual understanding over technical skills, whilst humanities educators described evolving their roles to focus more on developing critical analysis and interpretative capabilities. These adaptations align with Barua et al.'s (2022) findings regarding the implications of AI reliance on students' critical thinking skills. Research findings align with Zouhri and El Mallahi's (2024) work on evolving teaching practices, highlighting how effective AI adoption requires balancing new technologies with proven pedagogical methods.

5. Discussion

This study revealed two fundamental shifts in higher education: the evolving role of educators and the tension between personalised and comprehensive education. These findings both support and extend current research whilst revealing new insights across different educational contexts.

5.1. Research Findings and Theoretical Alignment

5.1.1. Critical Thinking and Pedagogical Impact

The findings regarding educators' concerns about critical thinking align with Barua et al.'s (2022) research, particularly in STEM fields where educators identified specific concerns about students' reliance on AI for answers without developing conceptual understanding. In the humanities, the research revealed new concerns about students bypassing essential analytical and synthesis processes, extending beyond the current literature.

5.1.2. Evolution of Educator Roles

As AI manages routine tasks, educators' roles have shifted from instructors to facilitators and interpreters of AI outputs. This transformation aligns with Zouhri and El Mallahi's (2024) research but reveals specific implications for teaching practices. Educators have adopted sophisticated assessment methodologies integrating AI capabilities with professional expertise, establishing innovative frameworks whilst retaining instructional authority.

Teaching practices now combine technology-enhanced instruction with essential interpersonal elements, requiring continuous professional development in both digital and pedagogical expertise. These observations align with Huang et al.'s (2024) research, revealing new insights into practical implementation challenges in contemporary teaching environments.

5.1.3. Personalised Learning and Educational Breadth

The study revealed more substantial concerns about maintaining educational breadth than previously identified in the literature. These findings support and extend Hashim et al.'s (2022) research on AI-enabled personalisation. Educators emphasised the challenge of balancing individualisation with collaborative learning, noting that whilst AI excels at personalised instruction, it must not compromise peer interaction benefits. The research highlighted how instructors integrate technological personalisation with established pedagogical methods to develop analytical skills. Teachers in the study frequently mentioned fair access to learning technology as a significant priority. They believed personalised learning should benefit every student, whether from affluent or disadvantaged communities.

5.2. Implementation Challenges and Opportunities

The study identified three areas affecting successful AI integration:

5.2.1. Teacher Preparation

The findings support Rueda and Batanero's (2022) research and emphasise the need for comprehensive training in AI implementation. The study extends their work by identifying specific areas where educators need support in balancing technical skills with pedagogical judgement, aligning with Ibrahim's (2024) research on effective ICT implementation.

5.2.2. Infrastructure Requirements

The findings validate Chan's (2023) framework on operational infrastructure whilst revealing new insights into how technical resources directly affect teaching choices. Kennedy's (2023) identification of resource barriers proves especially relevant, with the study providing specific examples of how inadequate technical support impacts AI implementation. Significantly, the availability and reliability of infrastructure emerged as a key factor influencing educators' decision-making capacity. Begum (2024) emphasises how robust technical infrastructure enables more confident and informed decisions about AI integration in teaching practices, whilst infrastructure limitations often lead to more conservative decision-making approaches. Based on the current study's findings, this relationship between infrastructure and decision-making authority demonstrates how technical resources fundamentally shape educators' ability to make and implement pedagogical choices effectively.

5.2.3. Digital Equity Considerations

Building on Prodani et al.'s (2020) work on technology access, this study reveals more detailed insights into how unequal AI access affects educational quality. The findings align with Moldavan et al.'s (2021) research whilst offering new perspectives on maintaining educational standards across diverse student populations. Park and Kwon (2024) suggest that addressing these equity challenges requires long-term strategic planning and continuous assessment of access barriers.

This equity consideration affects the ability to deliver personalised learning experiences, as highlighted in section 5.1.3, where the balance between individualisation and comprehensive education depends heavily on equitable access to AI tools.

The current study's findings indicate that future success in AI integration depends on providing equitable access and ensuring sustained support for diverse learning communities, especially as AI technologies continue to evolve in educational settings.

6. Analysis of Research Questions

6.1. RQ1: How does AI integration shift the balance of decision-making in higher education teaching?

AI's role is to complement teachers' abilities. Whilst AI addresses routine functions like assessment grading and adjusting learning speeds, educators remain in charge of making critical pedagogical decisions. This creates a balanced approach where AI manages data-driven, routine administrative decisions whilst educators retain control of pedagogical decisions requiring empathy and context. The findings align with Zouhri and El Mallahi (2024), who emphasise teaching quality while adapting to AI integration. A collaborative space emerges where AI insights inform but do not determine educator choices, especially in areas requiring an in-depth understanding of student learning processes (Participant 1 and Participant 4). This extends Barua et al.'s (2022) work on AI's role in education, demonstrating how this balanced decision-making approach helps preserve critical thinking whilst utilising AI's administrative capabilities.

6.2. RQ2: Do educators view AI-driven personalised learning as a threat to comprehensive education?

Educators demonstrate an in-depth understanding of AI-driven personalised learning rather than viewing it as a direct threat. Whilst acknowledging its benefits for individual student progress, educators identify specific areas requiring careful consideration. As evidenced by science educators (Participant 3), there are concerns about maintaining fundamental understanding whilst using AI for personalisation. These findings align with Hashim et al.'s (2022) research on personalised learning, showing how educators balance individualisation with collaborative learning needs. Arts educators emphasised preserving spontaneity and creative development (Participant 7), demonstrating the importance of maintaining comprehensive educational experiences alongside AI-enhanced personalisation. This perspective suggests that successful AI integration depends on thoughtful implementation that preserves personalised learning opportunities and broader educational goals.

6.3. Research Questions' Findings

Analysis reveals significant interconnections between the identified themes. The concern for maintaining critical thinking directly relates to the risk of over-reliance on AI, suggesting these issues must be addressed concurrently. The theme of changing educator roles interconnects with the need for enhanced professional development and ethical guidelines, indicating that successful AI integration requires a comprehensive approach to addressing multiple challenges simultaneously.

The results signify a complicated transformation that influences multiple aspects of the educational process that emphasises three critical areas: the evolution of educator roles, the tension between personalisation and comprehensive education, and the need for discipline-specific approaches to AI integration. The findings demonstrate how AI can improve educational approaches through thoughtful implementation considering pedagogical and technological dimensions.

7. Implications and Recommendations

The thematic analysis revealed five areas that reflect the complex nature of AI integration in education: academic integrity, administrative efficiency, data-driven insights, personalised learning, and ethical considerations. Based on these findings, the following sections present recommendations organised into four domains: curriculum development and professional training, policy and ethical guidelines, implementation strategies and stakeholder engagement, and future directions.

The recommendations presented in the following sections align with Chan's (2023) multidimensional AI policy framework, which proposes addressing AI integration through pedagogical, governance, and operational dimensions. Each dimension requires specific stakeholder involvement—teachers leading pedagogical implementation, senior management establishing governance protocols, and technical staff ensuring operational effectiveness.

7.1. Curriculum Innovation and Professional Development

Educational institutions should develop systematic AI literacy programmes across all levels whilst creating discipline-specific assessment methods that preserve critical thinking. The arts education perspective highlighted how creativity and collaborative learning skills remained distinctly human-centred (Participant 7), reinforcing the need for a balanced curriculum design. Science educators emphasised using AI to enhance rather than replace fundamental understanding (Participant 2).

Professional development requires a substantial investment for effective AI integration. The 'Changing Educator Roles' theme emerged strongly across participant responses, highlighting the need to balance AI efficiency with personal engagement. Educators stressed that professional development should focus on AI as an enhancement

rather than replacing existing teaching methods (Participant 4). Science education revealed concerns about balancing technological support with analytical skill development (Participant 3).

7.2. Policy and Ethical Guidelines

Policy reform requires reassessing regulations related to academic integrity, evaluation methods, and technological applications. All seven educators expressed concerns about verifying and authenticating student work in an AI-enhanced environment. Policy changes must focus on balancing technological integration with academic standards, developing frameworks that address AI-generated content, protecting data privacy, and maintaining assessment integrity.

Ethical guidelines must address data protection, AI-generated content ownership, and ethical considerations whilst aligning with fundamental academic values. Concerns about academic integrity emerged regarding AI's accessibility (Participant 6). The challenge of distinguishing between appropriate AI assistance and over-dependence in student work was a primary concern (Participant 5), whilst science educators emphasised the need for clear guidelines about AI's role in problem-solving (Participant 3).

7.3. Implementation Strategy and Stakeholder Engagement

Working across subject boundaries proves essential when tackling the complex challenges identified in this research. Partnerships between educational professionals and AI developers play an important role in maintaining human engagement in learning environments. A fundamental challenge emerged in reconciling different perspectives between science and arts education (Participant 3), where priorities regarding algorithmic processes and student engagement often conflict.

Continuous engagement among diverse stakeholders will influence an educational future that effectively harnesses AI capabilities whilst maintaining educational principles. Institutions should establish regular consultation processes, create comprehensive feedback mechanisms, and develop clear communication channels between educators and AI developers.

7.4. Future Directions

Research must prioritise the balance between AI assistance and developing critical thinking and independent learning skills, a concern expressed by all participants. Educators emphasised understanding AI's developmental effects over extended periods (Participant 4), tracking student progress from first year to completion. The complexity of such research presents challenges in maintaining methodological consistency as AI technology evolves.

Education's future will blend AI-enhanced and traditional learning experiences. Institutions should establish pilot programmes testing different levels of AI integration, develop flexible frameworks based on subject requirements, and create mechanisms for continuous evaluation. This includes collecting feedback from students and educators, evaluating learning outcomes, and monitoring the balance between AI-enhanced and traditional pedagogies.

8. Conclusion

This study explored educators' perspectives on AI integration in higher education, focusing on decision-making processes and personalised learning. Through semi-structured interviews with seven experienced educators, the research revealed how AI transforms educational practices whilst preserving essential human elements.

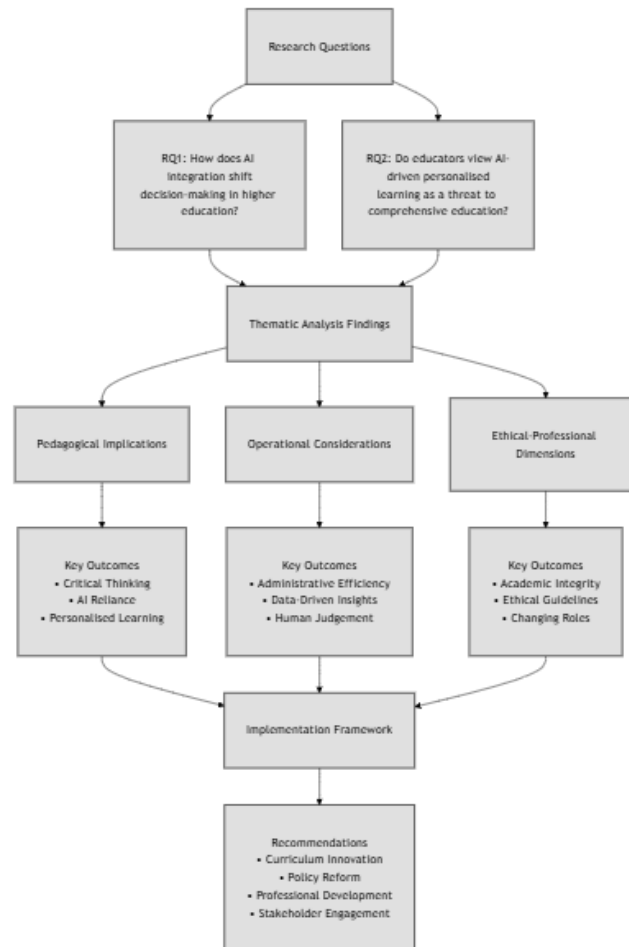


Figure 1: Research Framework for AI Integration in Higher Education: From Questions to Implementation

The framework illustrates the systematic progression of the research, beginning with the research questions about decision-making shifts and personalised learning. The central elements—pedagogical implications, operational considerations, and ethical-professional dimensions—inform the key outcomes and implementation recommendations. The interconnected structure shows how these elements work together to guide AI integration whilst maintaining educational quality.

Addressing RQ1, the findings demonstrate that AI integration creates a hybrid decision-making model where AI handles routine administrative tasks whilst educators maintain authority over crucial pedagogical choices. This balance allows educators to focus on interpretative and qualitative judgements that require human insight and experience.

For RQ2, educators view AI-driven personalised learning not as a threat but as a tool requiring thoughtful implementation. The main concern centres on maintaining a balance that preserves critical thinking and comprehensive educational values, emphasising the irreplaceable human elements of education—emotional intelligence, spontaneity, and ethical judgement.

The findings' analysis discovered five interconnected domains: curriculum innovation, ethical guidelines, interdisciplinary collaboration, policy reform, and professional development. Addressing these domains requires participation and carefully structured planning efforts from all relevant parties. A recurring difficulty emerged from the research: bridging the gap between contrasting academic values—where technical accuracy dominates scientific fields whilst expressive creativity guides artistic domains. This disconnect highlights why stronger cross-disciplinary dialogue must be established.

As AI technology rapidly advances, regular evaluation becomes necessary to account for emerging capabilities. Future research should explore the extended impact of AI implementation, methods for fostering collaboration across academic disciplines, and longitudinal studies of student development in AI-enhanced learning environments. Clear frameworks must balance AI assistance with human judgement, supported by robust ethical guidelines that protect academic integrity.

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