Perception Matters: The Role of AI Literacy and Attitudes in Institutional Readiness among Academic Leaders

Nur Rashidah Khairunnisa Ranjeeta binti Abdullah*, Kok Boon Shiong; Mohamed Nazul bin Ismail, Azlin binti Mohd Rosdi & Zanariah binti Mohd Idris

Abstract – **The integration of Artificial Intelligence (AI) in education has accelerated rapidly, yet the readiness of academic leaders to adopt and implement AI remains uncertain. While prior studies have largely focused on students' and teachers' perceptions, limited attention has been given to how AI literacy influences institutional readiness among educational leaders. This study aims to examine the relationship between AI literacy, perceptions of AI, and institutional readiness among academic leaders in teacher education institutions. A quantitative research design was employed using survey data collected from 19 department heads. Data were analyzed using descriptive statistics and correlation analysis, with multiple linear regression conducted on an exploratory basis. The findings indicate that while AI literacy serves as a foundational component, perceptions of AI did not demonstrate a statistically significant relationship with institutional readiness in this sample. Interestingly, higher AI literacy was positively associated with perceived implementation challenges, suggesting an 'expertise-awareness paradox' where knowledgeable leaders may more accurately identify the complexity of AI integration. These results suggest that for this cohort of academic leaders, cognitive and affective attitudes (perceptions) may not be the primary drivers of readiness. Instead, the focus may need to shift toward concrete knowledge and practical skill development to bridge the gap between AI awareness and implementation. This study contributes to the literature by highlighting the distinct roles of knowledge and perception in the context of institutional change. The findings provide practical implications for policymakers to design targeted professional development programs that prioritize AI literacy and address the operational challenges of integration. However, given the small sample size, the findings should be interpreted as preliminary. Future research should explore additional structural and contextual factors that influence AI readiness across diverse educational settings.**

Keywords – Artificial Intelligence (AI), AI Literacy, Institutional Readiness, Academic Leadership, Teacher Education, Implementation Challenges

I. INTRODUCTION

The global educational landscape is currently navigating a paradigm shift driven by the rapid advancement and integration of Artificial Intelligence (AI). What began as a nascent technological curiosity has, in a remarkably short period, transformed into a structural necessity, fundamentally altering the fabric of teaching, learning, and institutional administration. Higher education institutions, particularly teacher education providers, are now faced with an urgent mandate: to modernize curricula and pedagogical practices to remain relevant in an AI-augmented world. This transition, however, is not merely a matter of technical adoption; it is a complex organizational undertaking that requires strategic oversight, resource allocation, and a systemic shift in leadership culture.

Rotana et al., (2026) & Horn et al. (2026) emphasise that AI literacy and positive attitudes among academic leaders are critical determinants of institutional readiness for Artificial Intelligence (AI) integration in higher education. They argue that these factors significantly shape how universities adopt and innovate with AI while simultaneously managing associated risks such as threats to academic integrity, concerns over data privacy, and issues of equity in educational provision. The authors further highlight that effective institutional governance and curriculum transformation depend not only on technological adoption but also on the capacity of academic leaders to critically engage with AI systems and their ethical implications.

AI literacy and leadership attitudes play a central role in ensuring that Artificial Intelligence (AI) integration in higher education is both responsible and sustainable, particularly in addressing ethical and operational challenges. However, current literature has largely focused on the affective responses of students and teachers, emphasizing their perceptions, anxieties, and acceptance levels, while often overlooking the critical role of academic leadership. As primary architects of institutional policy, academic leaders are pivotal in determining the success of AI adoption and implementation within higher education institutions. Nevertheless, it remains unclear whether their readiness for AI integration is driven primarily by positive perceptions or by their actual technical and ethical understanding of the technology (AI literacy). If leaders rely solely on favourable attitudes without sufficient competence to evaluate issues such as algorithmic bias, data validity, and pedagogical implications, institutions may become vulnerable to ineffective or unethical AI deployment.

Consequently, this study seeks to investigate the drivers of institutional readiness within teacher education. By treating perceived implementation challenges as an inverse indicator of readiness, this study aims to disentangle the influence of cognitive competence (AI literacy) from affective attitudes (perception). To address these gaps, the following research questions guide this study:

Nur Rashidah Khairunnisa Ranjeeta binti Abdullah, INTI International University (i25038057@student.newinti.edu.my).
Kok Boon Shiong, Institut Pendidikan Guru Malaysia Kampus Pendidikan Teknik (kokboonshiong@ipgm.edu.my).
Mohamed Nazul bin Ismail, Institut Pendidikan Guru Malaysia Kampus Pendidikan Teknik (mohamednazul@ipgm.edu.my).
Zanariah Binti Mohd Idris, Institut Pendidikan Guru Malaysia Kampus Pendidikan Teknik (ipgm-1692@moe-dl.edu.my).
Azlin Binti Mohd Rosdi, Institut Pendidikan Guru Malaysia Kampus Pendidikan Teknik (azlin@ipgm.edu.my).

- RQ1: What is the current state of AI literacy, perceptions, and implementation challenges among academic leaders?
- RQ2: To what extent does AI literacy and perception correlate with institutional readiness?
- RQ3: How do AI literacy and perception predict institutional readiness?

By clarifying the extent to which knowledge-based competencies outweigh perceptual frameworks, this study provides a theoretical and practical roadmap for university administrators to move beyond awareness and toward effective, evidence-based AI implementation.

II. PROBLEM STATEMENT

Despite the rapid advancement of artificial intelligence (AI) in higher education, there remains limited understanding of how AI literacy and attitudes among academic leaders influence institutional readiness for AI integration. While many institutions recognize the potential of AI to enhance teaching, learning, and administrative processes, the extent to which leaders are prepared to guide and implement this transformation remains unclear (Eskiadi et al., 2025).

Several limitations remain evident in the current literature on AI literacy in leadership development. For instance,
Nyakora et al. (2025) do not clearly specify the methodologies used to assess AI literacy within leadership programs, creating uncertainty regarding how this competency can be reliably measured. Additionally, the study provides limited engagement with the ethical implications of AI integration, despite their importance for responsible and informed decision-making. The authors also give insufficient attention to the practical challenges leaders encounter when implementing AI across diverse organizational contexts, which may constrain effective adoption. Furthermore, the absence of comprehensive frameworks for developing AI literacy among leaders leaves unresolved questions about best practices in leadership training. Finally, the long-term implications of AI literacy for organizational culture and employee engagement remain underexplored, despite their significance for sustaining inclusive and adaptive institutional growth.

Kumar et al. (2024) suggest that although academic leaders may express positive perceptions toward AI, this does not always translate into effective institutional adoption. Gaps remain in understanding the level of AI literacy among leaders and how it shapes their confidence, decision-making, and strategic readiness for AI integration. There is a lack of clarity on how academic leaders perceive and understand the ethical implications of Artificial Intelligence (AI) in higher education, particularly in relation to data privacy and algorithmic bias. While these issues are widely acknowledged, limited attention has been given to how they influence leaders' attitudes and institutional decision-making processes.

Furthermore, the extent to which academic leaders are prepared to address AI-related risks and governance challenges remains underexplored, especially in terms of their AI literacy and readiness to implement responsible AI policies. Existing discussions on AI in education often overlook how leadership perceptions translate into institutional readiness for adoption and regulation.

In addition, although concerns regarding the broader impact of AI on educational practices have been raised, there is insufficient focus on how academic leaders can develop balanced strategies that ensure ethical, effective, and sustainable integration of AI in higher education institutions.

Furthermore, many institutions lack clear policies, structured guidelines, and targeted professional development programmes to support leadership in navigating AI-driven change. Ethical concerns, including data privacy, algorithmic bias, and responsible AI governance, further complicate institutional decision-making, yet these issues are not consistently addressed in leadership training or institutional frameworks. As a result, disparities in readiness and implementation strategies across institutions persist. Therefore, there is a need to examine how academic leaders' perceptions, AI literacy, and attitudes collectively influence institutional readiness for AI adoption, in order to inform more effective policy development, leadership training, and strategic planning in higher education.

III. LITERATURE REVIEW

From Novelty to Necessity: The AI Transformation in Teacher Education

The rapid integration of Artificial Intelligence (AI) into higher education has transitioned from a peripheral technological curiosity to a foundational pedagogical necessity. As international bodies emphasize, teacher education institutions, acting as the gatekeepers of future pedagogical standards, must view AI not merely as an isolated productivity tool, but as core infrastructure Holmes et al. (2022). To ensure this systemic shift is successful, academic leaders must transition away from perceiving AI adoption as a mere discrete technological upgrade. Instead, they are required to conceptualize the integration of these tools as a fundamental restructuring of the entire learning environment. This perspective, as highlighted by Ng et al. (2021), suggests that leadership must view AI not as an isolated add-on, but as a core component of the institution's pedagogical infrastructure.

Redefining AI Literacy: Beyond Technical Proficiency

In contemporary scholarship, a clear distinction is increasingly made between functional AI literacy, defined as the technical proficiency required to operate generative tools, and critical AI literacy, which encompasses the broader capacity to evaluate algorithmic bias, data privacy, and the ethical implications of pedagogy. As AI systems become more autonomous, academic leaders are frequently tasked with making high-stakes policy decisions that require more than just technical skill. Without the development of critical literacy, these leaders find themselves constrained to reactive, ad-hoc decision-making. This deeper level of competency, as explored by Ng et al. (2021), serves as the essential cognitive foundation for evaluating the validity of AI-generated content and heightens a leader's awareness of

the multifaceted risks and complexities inherent in AI implementation.

As AI systems become more autonomous, academic leaders are tasked with high-stakes policy decisions. Without critical literacy, leaders are constrained to reactive, ad-hoc decision-making. Recent empirical research underscores that critical AI literacy acts as the essential cognitive skill required to evaluate the validity of AI-generated content (Spathopoulou et al., 2025). This competency may also increase leaders' awareness of the complexities and risks associated with AI implementation, potentially leading to a more critical evaluation of institutional readiness. Ó Ceallaigh et al. (2025) highlight that the integration of GenAI remains underexplored at the institutional level, particularly in relation to teacher educators' readiness, required competencies, and curriculum adaptation. Their study underscores the critical need for comprehensive institutional support, including the development of essential AI competencies, innovative pedagogical approaches, and responsible policy frameworks to guide integration.

Complementing this, the study by Innovations in Education and Teaching International (2025) indicates that while educators generally exhibit positive attitudes towards GenAI, actual adoption is constrained by concerns related to ethics, reliability, and a lack of pedagogical strategies and professional training. Together, these studies suggest that institutional readiness is not solely dependent on positive attitudes but requires the alignment of AI literacy, structured professional development, and clear institutional policies. Ultimately, these findings emphasize the critical necessity of empowering teacher educators and academic leaders with a dual framework of technical competence and robust institutional support systems. By aligning specialized AI literacy with structured professional development and clear policy guidance, institutions can move beyond mere awareness toward a more effective, sustainable, and responsible integration of Generative AI within the higher education landscape.

The Theoretical Limits of "Perception" in Technology Acceptance

For decades, models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) have dominated the discourse, positing those individual perceptions, specifically "perceived ease of use" and "perceived usefulness," are the primary predictors of technology adoption Davis (1989). While traditional models have long served as the standard for understanding technology adoption, emerging literature has begun to increasingly challenge the sufficiency of these frameworks within the complex era of Generative AI. Scholars such as Venkatesh et al. (2003) have laid the groundwork for these discussions, yet there is a growing consensus that earlier metrics may not fully capture the nuances required for modern institutional readiness. This shifting perspective suggests that relying solely on established "perception-based" frameworks might overlook the critical role of concrete, knowledge-based competencies, ultimately creating a significant blind spot in how institutional preparedness is measured today.

Findings suggest that while positive perceptions are desirable, they may not consistently correlate with institutional capability or practical readiness, particularly in complex technological contexts. This theoretical divergence is critical: an academic leader's affective attitude toward AI may be entirely decoupled from the practical requirements of institutional implementation. Relying on "perception-based" frameworks in the current climate may underestimate the influence of concrete, knowledge-based competencies, creating a blind spot in how we measure institutional preparedness. This raises an important question as to whether perceptions of AI remain a significant predictor of institutional readiness among academic leaders, forming a key focus of the present study.

Navigating the 'Readiness-Execution' Gap

The divergence between a leader's awareness of AI's importance and their ability to implement it has been identified in recent scholarship as the "readiness-execution gap" (Brown et al., 2024). In a shifting educational landscape, a notable tension has emerged between conceptual recognition and operational reality. While academic leaders frequently report a high degree of awareness regarding the strategic importance of artificial intelligence, they simultaneously find themselves navigating a landscape of overwhelming practical hurdles. This "readiness-execution gap" is characterized by complex barriers such as deep-seated faculty resistance, the misalignment of existing curricula with AI capabilities, and escalating concerns over data security. As noted by Selwyn (2019), these obstacles suggest that institutional preparedness involves far more than simple awareness; it requires a systematic approach to overcoming the structural and human challenges that often stall the transition from theoretical acceptance to effective implementation.

Spathopoulou et al. (2025) highlight that faculty perceptions of AI, shaped by experience, discipline, and institutional context, play a crucial role in determining institutional readiness. Similarly, Prabha (2025) emphasises that perceptions of AI usage, attitudes towards AI, and self-perceived AI literacy significantly influence readiness, while concerns regarding academic repercussions and job security act as key barriers to adoption. Together, these studies underscore the growing role of artificial intelligence (AI) in transforming higher education through enhanced teaching, learning, and administrative processes, while also highlighting the importance of ethical considerations, digital literacy, and clear institutional guidance.

TABLE 1: DEMOGRAPHIC PROFILE

Variable	Category	Frequency (F)	Percentage (%)
Gender	Female	10	52.6
	Male	9	47.4
Current Position	Head Of Department	12	63.2
	Senior Management (Director/Deputy)	2	10.5
	Head Of Unit / Secretary / Others	5	26.3
Teaching Experience	More Than 15 Years	18	94.7
	11–15 Years	1	5.3

Note. N = 19. Categories Are Based On Respondents' Self-Reported Positions.

Building on this, the present study conceptualises institutional readiness not merely as an attitudinal state, but as an operational capability, measured through perceived implementation challenges, where higher reported challenges indicate lower readiness. This perspective aligns with prior work suggesting that individuals who report higher levels of readiness are often more aware of potential risks and complexities (Kruger & Dunning, 1999). Accordingly, this study extends existing literature by examining whether knowledge-based competencies, particularly AI literacy and perceptions of AI, serve as key drivers of institutional preparedness, especially in relation to managing implementation challenges in AI integration.

III. METHODOLOGY

This study employed a quantitative, cross-sectional research design to explore the relationships between AI literacy, perceptions of AI, and institutional readiness within teacher education contexts. Given the exploratory nature of the study and the limited number of academic leaders available, a small-sample quantitative approach was adopted. The sample comprised 19 academic leaders, including department heads and faculty deans, selected through purposive sampling. All participants held decision-making roles related to curriculum planning and technological integration, ensuring that responses reflected informed institutional perspectives.

Data were collected using a structured, self-administered questionnaire consisting of four sections. The first section gathered demographic information. The second and third sections measured AI literacy (cognitive competence) and perceptions of AI (affective attitudes) using 5-point Likert scales. The final section measured institutional readiness, which was operationalized inversely through perceived implementation challenges. Higher reported challenges indicate lower levels of readiness. The internal consistency of the constructs was assessed using Cronbach's Alpha, with values ranging from .75 to .89, indicating acceptable reliability. Data analysis was conducted using IBM SPSS Statistics (Version 20). Descriptive statistics (means and standard deviations) were used to summarize the variables. Pearson correlation analysis was performed to examine relationships between variables.

Given the small sample size, multiple linear regression was conducted on an exploratory basis to examine the predictive relationships between AI literacy, perceptions of AI, and perceived implementation challenges. Results from regression analysis are interpreted with caution due to limited statistical power.

The demographic distribution of the 19 respondents indicates a balanced representation in terms of gender, with females comprising **52.6% (f=10)** and males **47.4% (f=9)** of the total sample. This near-equal distribution is essential for the validity of the study, as it ensures that the perceptions of AI literacy and its implementation challenges are representative of both genders. By minimizing gender bias, the findings provide a comprehensive institutional view of how leadership roles, regardless of gender, approach the integration of artificial intelligence in the educational landscape.

In terms of institutional hierarchy, the study successfully engaged a high-level administrative cohort. A significant majority of the participants, 63.2% (f=12), serve as Heads of Departments, while the remaining 36.8% consists of Senior Management, including Directors and Deputy Directors and various Unit Heads. This concentration of leadership is strategically important; these individuals act as the primary gatekeepers for technological adoption. Their perspectives are vital as they are responsible for translating institutional policy into departmental practice, making their awareness of implementation barriers a critical factor in the success of any AI-related intervention.

Furthermore, the data reveals an exceptionally high level of professional maturity among the respondents, with 94.7% (f=18) possessing more than 15 years of experience in the education sector. This suggests that the feedback provided is rooted in extensive pedagogical and administrative expertise rather than mere theoretical understanding. In the context of the "Expertise-Awareness Paradox," this seniority implies that the participants possess a "Magnifying Glass Effect" toward AI implementation. Their long-term experience allows them to move beyond the "Illusion of Simplicity" often held by novices, leading instead to a more nuanced and informed awareness of the complex risks, ethics, and logistical challenges associated with AI integration.

Instruments, Data Collection and Data Analysis

The data collection process employed a structured, self-administered survey instrument organized into four primary sections. The initial section captured demographic information, including tenure and institutional type. The second and third sections utilized validated 5-point Likert scales to measure AI literacy (the independent variable representing cognitive competence) and subjective perceptions of AI (the independent variable representing attitude), assessing both technical capability and beliefs regarding AI utility and risk. The concluding portion of the methodology focused on evaluating institutional readiness by operationalizing it through the measurement of perceived implementation challenges. This analytical framework is built upon the assumption of an inverse relationship between these two variables, where a higher frequency of reported obstacles acts as a direct indicator of diminished organizational preparedness. By adopting this approach, the study effectively treats the identification of complex barriers as a reflection of the gap between an institution's current

state and its capacity for successful AI integration. The internal consistency of these constructs was verified using Cronbach's Alpha, with coefficients ranging from .75 to .89, demonstrating acceptable reliability across all scales.

The data analysis for this study followed a structured, three-stage procedure conducted using IBM SPSS Statistics (Version 20; IBM Corp., 2011). In the initial stage, descriptive statistics, specifically means and standard deviations, were calculated to summarize the demographic profiles and establish an overview of the participants' current levels of AI literacy, perceptions, and implementation challenges. The second stage employed Pearson's correlation coefficient (r) to assess the strength and direction of the associations between these primary variables.

Finally, a multiple linear regression analysis was performed to determine the predictive influence of AI literacy and perceptions on institutional readiness. Within this model, 'perceived implementation challenges' served as the dependent variable, while 'AI literacy' and 'perception of AI' were included as independent predictors using the 'enter' method. To ensure analytical integrity, all statistical tests were evaluated at a significance level of $p < .05$, and missing data were managed through listwise deletion.

IV. FINDINGS

Reliability Analysis

Cronbach's Alpha was used to assess internal consistency. The results indicated acceptable reliability for all constructs: AI Literacy ($\alpha = .87$), Perceptions of AI ($\alpha = .85$), and Implementation Challenges ($\alpha = .89$).

Descriptive Statistics

Descriptive statistics were computed for all variables ($N = 19$). Academic leaders reported a mean AI literacy score of 35.78 ($SD = 6.77$), indicating a moderate level of familiarity with AI. The mean perception score was 27.26 ($SD = 3.09$), reflecting generally positive attitudes toward AI. The mean score for perceived implementation challenges was 29.34 ($SD = 6.56$), suggesting a moderate level of perceived difficulty in AI integration.

TABLE 2: DESCRIPTIVE STATISTICS (N=19)

Variable	Mean	Std. Deviation
Perception	27.26	3.09
AI Literacy	35.78	6.77
Implementation Challenges	29.34	6.56

Note. $N = 19$, M = Mean; SD = Standard Deviation

Correlation Analysis

Pearson correlation analysis revealed a moderate positive relationship between AI literacy and perceived implementation challenges ($r = .435$). However, this relationship did not reach statistical significance at $p < .05$, likely due to the small sample size. No significant relationships were observed between perceptions of AI and implementation challenges ($r = -.037$), or between perceptions of AI and AI literacy ($r = .075$).

TABLE 3: MEANS, STANDARD DEVIATIONS, AND CORRELATIONS FOR STUDY VARIABLES

Variable	M	SD	1	2	3	4
AI Literacy	3	4.09	—			
AI Perception	2	2.02	.59**	—		
AI Readiness	2	2.43	.28	.27	—	
AI Workshop	2	1.83	.12	.28	.46*	—

Note. $N = 19$. * $p < .05$. $p < .01$.

These findings suggest that while there is an observable trend indicating that higher AI literacy may be associated with greater awareness of implementation challenges, the evidence remains preliminary. Correlation analysis revealed a significant positive relationship between AI literacy and AI perception ($r = .59$, $p < .01$), indicating that higher levels of AI literacy are associated with more positive perceptions of AI. Additionally, AI workshop participation was significantly correlated with AI readiness ($r = .46$, $p < .05$). Other correlations were positive but not statistically significant, suggesting weaker associations among the remaining variables

Exploratory Regression Analysis

A multiple linear regression analysis was conducted on an exploratory basis to determine if AI literacy and perceptions of AI predict perceived implementation challenges, operationalized here as a proxy for institutional readiness. Due to the limited sample size ($N = 19$), these results should be interpreted as preliminary. The overall model did not achieve statistical significance ($F(3, 15) = 1.81$, $p = .189$), indicating that the model did not possess sufficient statistical power to yield robust effects. Nevertheless, the pattern of results indicated that AI literacy contributed positively to perceived implementation challenges, whereas perceptions of AI did not show a meaningful predictive influence. These trends align with our correlation findings, offering preliminary support for the proposed 'expertise-awareness paradox,' although further investigation with larger cohorts is necessary to validate these relationships.

V. DISCUSSION

Overview of the Expertise-Awareness Paradox

The results of this study highlight a phenomenon we term the "expertise-awareness paradox" among higher education leaders. This paradox suggests that academic leaders with lower levels of AI literacy are prone to underestimating the systemic complexities and risks associated with AI adoption. Our findings align with qualitative studies suggesting that many university leaders exhibit a fragmented understanding of AI, often narrowing their focus to immediate classroom concerns such as academic integrity and plagiarism (Moradimanesh et al., 2025; Cernicova-Palea, 2024). By framing AI primarily as a student tool, leaders may overlook critical infrastructural,

ethical, and governance requirements necessary for institutional-scale implementation.

Correlation Between AI Literacy and Perceived Challenges

A central finding of this research is the positive correlation between AI literacy and the depth of perceived implementation challenges. Leaders with higher digital and AI literacy tend to recognize a broader spectrum of ethical, technical, and pedagogical hurdles. In contrast, those with lower literacy often perceive fewer obstacles, not because the obstacles do not exist, but because they lack the technical "vocabulary" to identify them. While quantitative data on this specific correlation is still emerging in the literature, existing evidence supports the idea that digital literacy acts as a significant moderator for AI adoption and educational effectiveness (ul Haq et al., 2025). When leaders lack this literacy, institutional efforts often become siloed or paralyzed by a lack of clear procurement and budgeting strategies (Wu & Carroll, 2025). This suggests that increasing leader literacy does not necessarily make AI adoption seem "easier", rather, it makes the complexity of the task visible, which is a prerequisite for responsible leadership.

The observed positive correlation between AI literacy and perceived implementation challenges (r = .435) provides indicative support for a distinctive cognitive pattern among academic leaders, although it did not reach statistical significance, likely due to the small sample size (N = 19). The direction and magnitude of the relationship suggest an "expertise–awareness paradox," whereby leaders with higher levels of AI literacy report greater awareness of implementation challenges rather than perceiving AI integration as easier. This indicates a shift from the "illusion of simplicity" to a more nuanced understanding of institutional complexity, where AI literacy functions as a critical lens for identifying risks such as algorithmic bias, data governance issues, and pedagogical misalignment.

In contrast, leaders with lower AI literacy may perceive AI integration as relatively straightforward due to limited awareness of these complexities, suggesting that institutional readiness may be better conceptualised as "informed caution" rather than uncritical optimism. Additionally, the absence of a meaningful relationship between affective perceptions of AI and perceived implementation challenges suggests that positive attitudes alone are insufficient to explain readiness for AI adoption in complex institutional contexts. While these findings are exploratory and limited by statistical power and potential Type II error, they nevertheless indicate that cognitive competence may play a more influential role than affective attitudes in shaping leaders' responses to AI integration.

However, these conclusions should be interpreted cautiously due to the small sample size (N = 19), which limits generalisability. Future research with larger and more diverse samples is required to validate the proposed expertise–awareness paradox and to further examine the relative influence of AI literacy and leadership attitudes in shaping institutional readiness for AI adoption in higher education.

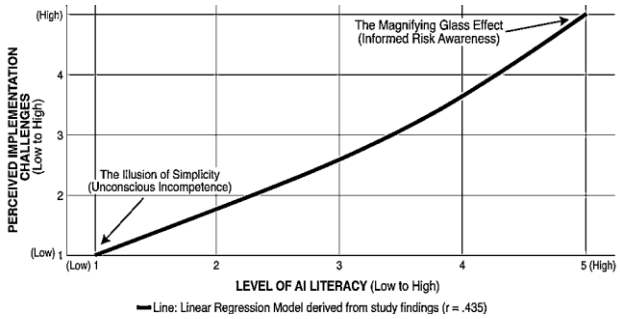


Figure 1: The relationship between AI literacy and perceived Implementation Challenges: "The Expertise- Awareness Paradox"

Note. Proposed conceptual model based on study findings. The line represents the linear regression trend observed (r = .435). The lower-left area represents "The Illusion of Simplicity" (Unconscious Incompetence), while the upper-right area represents "The Magnifying Glass Effect" (Informed Risk Awareness).

Figure 1 illustrates the *"Expertise-Awareness Paradox"* observed in this study. The positive slope represents the relationship between AI literacy and perceived implementation challenges, suggesting that readiness may be influenced by cognitive awareness. In the lower-left quadrant (*"The Illusion of Simplicity"*), leaders with emerging AI literacy may underestimate the institutional requirements for AI integration due to limited exposure to the systemic complexities of the technology. Conversely, the upper-right quadrant (*"The Magnifying Glass Effect"*) suggests that as leaders develop higher levels of AI literacy, their perception of implementation challenges increases. This pattern does not necessarily indicate institutional weakness, but rather reflects a form of *"informed risk awareness,"* where leaders are better equipped to identify structural and ethical barriers to effective AI adoption. Thus, the figure suggests that AI literacy may not resolve implementation challenges, but instead clarifies them, shifting the institutional focus from passive optimism toward more informed risk management.

VI. CONCLUSION AND IMPLICATIONS

This study investigated the interplay between AI literacy, perceptions, and institutional readiness among academic leaders in teacher education institutions. The findings demonstrate that while leaders maintain a moderate level of AI literacy and generally positive attitudes toward the technology, these factors do not translate into a perception of ease regarding implementation. On the contrary, the emergence of an "expertise-awareness paradox" suggests that as leaders gain technical and ethical knowledge (AI literacy), they become more cognizant of the structural and logistical complexities of AI integration.

The results further indicate that affective attitudes (perceptions) are not significant predictors of institutional readiness in this cohort. This challenges traditional technology acceptance models that prioritize "perceived ease of use" and suggests that for senior academic leaders, readiness is an operational capability driven by concrete knowledge rather than subjective optimism. Ultimately, institutional readiness should not be viewed as the absence

of challenges, but as a state of informed risk awareness where leaders are equipped to navigate the complexities of algorithmic bias, data governance, and pedagogical alignment.

The expertise–awareness paradox carries significant implications for institutional readiness, underscoring that leadership literacy in AI is not merely an individual competency but a critical structural driver of organizational preparedness. When leaders lack a coherent and informed understanding of AI, institutional efforts often become fragmented and reactive rather than strategically aligned (Cernicova-Palea, 2024). This condition fosters strategic fragmentation, where the absence of a unified vision creates a policy vacuum, allowing departments to independently adopt AI tools without consistent governance or coordination. It also contributes to resource misallocation, as leaders who underestimate the technical complexity of AI may underinvest in essential infrastructure and professional development, ultimately increasing the likelihood of unsuccessful implementation. Moreover, the paradox heightens ethical vulnerability, as a narrow focus on surface-level concerns such as plagiarism overlooks more complex issues, including data privacy, algorithmic bias, and long-term workforce implications (Moradimanesh et al., 2025).

Despite these important insights, several limitations must be acknowledged to ensure a balanced interpretation of the findings. The relatively small sample size of 19 academic leaders restricts the statistical power of the analyses and increases the risk of Type II errors, potentially obscuring meaningful relationships between AI literacy, perception, and readiness. Furthermore, the study's focus on department heads within teacher education institutions limits the generalizability of the results to broader higher education contexts or institutions with differing organizational cultures. The use of self-administered questionnaires also introduces the possibility of self-report bias, as participants may have provided socially desirable responses or overestimated their AI competencies. In addition, the operationalization of readiness through perceived implementation challenges, while theoretically grounded, captures only a partial dimension of institutional preparedness and may not fully reflect other critical aspects such as technological infrastructure, financial capacity, and long-term strategic planning. Together, these limitations suggest that while the findings offer valuable insights, they should be interpreted with caution and seen as a foundation for further, more comprehensive investigation.

To bridge the expertise-awareness gap, institutions must prioritize "Leadership AI Literacy" as a core competency for senior administrators. This involves moving beyond basic tool usage toward an understanding of AI governance, procurement ethics, and strategic integration. Strengthening institutional support systems, such as dedicated AI task forces and instructional design resources, is essential to translate leadership literacy into operational readiness (ul Haq et al., 2025; Management Readiness for AI, 2024).

To build upon these preliminary findings and address the identified limitations, future research should consider several key directions. First, future investigations should employ larger and more diverse samples across various universities to validate the "expertise-awareness paradox" and establish more robust, statistically significant predictive models for AI readiness. Additionally, longitudinal research tracking changes in leadership attitudes and literacy over a longer duration could reveal how the "Magnifying Glass Effect" and informed risk awareness evolve as institutions move from initial AI awareness to full-scale integration.

Utilizing qualitative exploration, such as semi-structured interviews or case studies with academic leaders, could provide deeper, nuanced insights into the specific challenges they identify, including ethical dilemmas, algorithmic bias, or faculty resistance, that quantitative scales may not fully capture. Furthermore, future research should investigate additional structural and contextual factors, including institutional policy frameworks, budget allocations, and formal governance structures, to understand how these external factors interact with individual leadership literacy. Finally, comparative analysis across different academic disciplines, such as comparing STEM faculties with the Humanities, could identify whether the "expertise-awareness paradox" is a universal phenomenon or influenced by the specific nature of a domain's academic content. The expertise-awareness paradox represents a significant hurdle for the future of higher education. By acknowledging that "what we don't know" about AI is often what poses the greatest risk, academic leaders can begin to move toward a more mature, literacy-driven model of institutional adoption.

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