

The persistence of ineffective pedagogy: a dead horse theory approach to teaching methods

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Article Info	ABSTRACT
Article history: Received May 5, 2025 Revised Feb 3, 2026 Accepted Mar 30, 2026 Keywords: Artificial intelligence in education Dead horse theory Educational reform Ineffective pedagogy Teaching methods	The study investigates the persistence of ineffective pedagogical practices in Jordan, Malaysia, and Australia through the lens of the dead horse theory. Conducted between October 2024 and April 2025, the research uses an explanatory sequential mixed-methods design, beginning with a large-scale survey followed by in-depth interviews to contextualize the quantitative results. A total of 690 participants—including K-12 teachers, higher education faculty, and school administrators—completed the survey, while 50 interviewees (15-20 per country) were purposively selected based on teaching experience, institutional role, and level of technology use. The findings reveal that traditional, teacher-centered methods such as lecture-based instruction and summative assessments remain dominant across all three countries, despite widespread recognition of their limitations. Although awareness of AI-based educational tools was highest in Australia (65%), actual usage remained low across all contexts, with Jordan reporting the lowest levels of integration. Barriers to adopting innovative pedagogies and technologies include inadequate infrastructure, limited teacher training, curriculum rigidity, and cultural resistance to change. These systemic constraints reinforce the cyclical persistence of outdated teaching methods, consistent with the dead horse theory metaphor. The study highlights the need for targeted professional development, curricular reform, and investment in technological infrastructure to support the transition toward student-centered, technology-enhanced learning environments. By addressing these barriers, educational systems can move beyond entrenched, ineffective practices and foster more adaptive, engaging, and future-ready teaching approaches. <i>This is an open access article under the CC BY-SA license.</i> 

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1. INTRODUCTION

Contemporary education is marked by a striking contradiction. On the one hand, research over the past two decades has consistently demonstrated the effectiveness of modern pedagogical approaches, student-centered learning, active engagement, formative assessment, and technology-enhanced instruction, alongside the growing potential of artificial intelligence (AI) to personalize learning and support teachers [1]–[3]. On the other hand, classrooms across much of the world continue to rely heavily on traditional, teacher-centered practices such as lecture-based instruction, rote memorization, and high-stakes summative assessment [4].

This tension between what is pedagogically possible and what is pedagogically practiced represents a persistent and underexplored gap in educational reform efforts.

This gap is not merely theoretical; it manifests differently across national contexts shaped by policy, culture, infrastructure, and assessment regimes. Jordan, Malaysia, and Australia provide a particularly instructive comparative lens. Jordan represents a system where exam-oriented curricula, centralized control, and limited technological infrastructure often constrain pedagogical innovation. Malaysia occupies an intermediate position, combining ambitious national digital education agendas with strong curricular regulation and culturally rooted teacher authority. Australia, by contrast, operates within a relatively well-resourced and technologically advanced system, yet still reports uneven adoption of student-centered pedagogies and AI-enhanced teaching despite high awareness and policy support. Examining these three contexts together allows for a nuanced analysis of how, despite differing educational conditions, they nonetheless converge around a shared outcome: the persistence of traditional teaching methods.

Despite sustained calls for reform and the availability of evidence-based alternatives, ineffective pedagogical practices remain remarkably resilient. This persistence can be understood through the lens of the dead horse theory, a metaphor that captures institutional behavior when ineffective practices are maintained long after they have ceased to serve their intended purpose [5], [6]. In education, this is evident when systems respond to disengaged students and poor learning outcomes not by rethinking pedagogy, but by intensifying testing, adding more content, or enforcing stricter compliance, much like investing in a better saddle rather than acknowledging that the horse is no longer alive. Rather than abandoning obsolete methods, institutions often double down on them, reinforcing the very practices that limit meaningful learning.

Traditional pedagogies, characterized by passive knowledge transmission and teacher dominance, were once aligned with industrial-era educational goals. However, they are increasingly mismatched with the cognitive, social, and professional demands of the 21st-century [7], [2]. These approaches often marginalize learner diversity, suppress critical thinking, and reduce learning to short-term performance on standardized assessments. In contrast, modern pedagogical models such as project-based learning, inquiry-driven instruction, and flipped classrooms-emphasize agency, collaboration, and real-world problem-solving [8]–[10]. When supported by digital technologies, and particularly AI, these models offer unprecedented opportunities for personalization, timely feedback, and data-informed instructional decision-making [3], [11], [12].

AI-based tools, including adaptive learning systems, intelligent tutoring platforms, and learning analytics, have the potential to fundamentally reshape teaching and learning by responding to individual learner needs at scale. Yet, the presence of such tools does not automatically translate into pedagogical transformation. Across contexts, AI is frequently underused, superficially adopted, or disconnected from meaningful instructional design. This disconnect suggests that the barrier to innovation is not technological availability alone, but deeper systemic, cultural, and institutional forces that sustain traditional practice.

Guided by the dead horse theory, this study investigates why outdated teaching methods persist in Jordan, Malaysia, and Australia despite widespread awareness of modern pedagogies and AI's educational potential. By adopting a comparative, mixed-methods approach, the study seeks to uncover how contextual constraints, such as curriculum rigidity, assessment pressures, infrastructure disparities, and cultural expectations, interact to reproduce ineffective pedagogy across diverse educational systems. In doing so, the study contributes to a clearer understanding of why educational reform so often stalls at the level of practice, even when the path forward appears well-mapped.

2. LITERATURE REVIEW

Despite sustained calls for educational reform, traditional pedagogical practices remain deeply entrenched in many educational systems. These practices-characterized by teacher-centered instruction, passive student roles, and standardized assessment-reflect what Freire conceptualized as the “banking model” of education, in which learners are positioned as recipients rather than active constructors of knowledge [13]. Although widely critiqued for limiting critical thinking, creativity, and learner agency, this model continues to dominate classrooms across contexts.

The persistence of ineffective pedagogy can be explained through the dead horse theory, which suggests that institutions often respond to failure by intensifying existing practices rather than abandoning them [14], [15]. In educational settings, this tendency manifests as increased testing, stricter curriculum control, and reinforced compliance mechanisms, all of which sustain traditional instruction rather than addressing its limitations [16]. Such responses prioritize stability and accountability over pedagogical effectiveness, contributing to systemic inertia. Institutional structures further reinforce this persistence. Rigid administrative frameworks, high-stakes assessment regimes, and limited teacher autonomy discourage pedagogical experimentation [17]. Teacher education and professional development programs, although evolving, often emphasize theoretical understanding at the expense of practical, innovative instructional

strategies [18]. These conditions create risk-averse teaching cultures in which traditional methods are maintained despite growing recognition of their shortcomings.

Research consistently shows that such pedagogies fail to meet the needs of contemporary learners. Passive instructional models do not adequately support higher-order cognitive processes such as analysis, synthesis, and evaluation, nor do they foster essential 21st-century competencies [19]–[21]. Moreover, traditional classrooms frequently overlook the social and emotional dimensions of learning, which are now recognized as central to academic success and learner well-being [22], [23]. In contrast to the persistence of ineffective methods, a substantial body of literature documents the effectiveness of student-centered and active learning approaches. Active learning strategies—including peer instruction, collaborative problem-solving, and interactive engagement have been shown to produce significantly better learning outcomes than traditional lecture-based instruction across disciplines [24]. These approaches not only improve academic performance but also promote engagement and equity, particularly for underrepresented learners [25].

Flipped classroom models further demonstrate the promise of pedagogical innovation. By relocating content delivery outside the classroom and dedicating in-class time to application and interaction, flipped learning environments foster learner autonomy and deeper understanding [25], [26]. Research across educational contexts indicates that flipped instruction enhances motivation, participation, and conceptual learning when supported by coherent instructional design. Inquiry-based and project-based learning approaches also offer compelling alternatives to traditional pedagogy. Inquiry-driven instruction supports metacognitive development and reflective learning, while project-based learning fosters creativity, collaboration, and real-world problem-solving skills [27], [28]. These approaches challenge the limitations of standardized instruction by positioning learners as active participants in knowledge construction. Similarly, culturally responsive pedagogy emphasizes integrating learners' cultural identities and lived experiences into instruction, thereby improving engagement and outcomes for diverse student populations [29], [30].

Digital technologies have further expanded the potential of innovative pedagogical approaches. Learning management systems (LMSs) provide scalable platforms for content delivery, communication, and assessment, supporting blended and flexible learning models [31]. Interactive digital tools and gamified learning environments enhance student motivation, participation, and formative assessment when aligned with pedagogy [32], [33]. More immersive technologies, including virtual and augmented reality, have demonstrated value in supporting experiential and contextual learning. Research indicates that immersive environments can enhance spatial reasoning, empathy, and knowledge retention, particularly in complex or abstract subject areas [34]–[36]. However, the literature also cautions that technological effectiveness depends on thoughtful pedagogical integration rather than novelty alone. AI represents a particularly significant development in educational technology. Intelligent tutoring systems and adaptive learning platforms use machine learning to provide personalized feedback and instruction, often achieving learning gains comparable to human tutoring [37]. Learning analytics further support instructional decision-making by identifying patterns in student data and predicting academic outcomes [38]–[40].

AI-powered assessment systems and conversational agents have also improved efficiency and accessibility in instructional support, particularly in large-scale and online learning contexts [41]. These tools enable timely feedback and continuous assistance, allowing educators to focus on higher-level instructional and relational aspects of teaching. Despite this documented potential, AI adoption remains limited and uneven. A recurring challenge is the lack of professional development that integrates pedagogical and technological knowledge, leaving teachers uncertain about how to use AI meaningfully [42], [43]. The literature highlights a persistent “technology without pedagogy” problem, where digital tools are adopted without rethinking instructional goals or learning design [44], [45]. Structural barriers further constrain pedagogical transformation. The digital divide continues to shape unequal access to technological resources, limiting the implementation of innovative strategies in under-resourced contexts [46], [44]. At the same time, ethical concerns surrounding AI, such as data privacy, surveillance, and algorithmic bias, have raised questions about responsible implementation [47], [48].

Although evidence-based teaching practices are well established in the research literature, they often fail to translate into classroom practice. Teachers report difficulty accessing research, adapting it to local contexts, and reconciling innovation with policy demands [49]. Short-term professional development initiatives are rarely sufficient to support sustained pedagogical change, underscoring the need for ongoing, collaborative, and practice-oriented learning opportunities [50], [51]. Addressing the persistence of ineffective pedagogy, therefore, requires systemic change. Scholars emphasize the importance of rethinking assessment regimes, supporting teacher agency, and aligning institutional structures with evidence-based practice [52]. Without such changes, even the most promising innovations risk being absorbed into traditional pedagogical frameworks rather than transforming them.

The literature reveals a clear tension between the persistence of ineffective pedagogical practices and the documented success of innovative, student-centered, and technology-enhanced approaches. While the

limitations of traditional pedagogy are well established and the benefits of modern strategies are extensively documented, fewer studies examine why ineffective methods persist across diverse national contexts. By applying the dead horse theory to Jordan, Malaysia, and Australia, this study addresses this gap and contributes to a deeper understanding of the systemic forces that sustain outdated pedagogy despite compelling evidence for change.

3. METHOD

This study employs a comprehensive mixed-methods research design to examine the ongoing persistence of ineffective pedagogical practices and analyze the influence of technological innovations, with a particular emphasis on AI, across various educational settings. The comparative analysis centers on three countries, Jordan, Malaysia, and Australia, each representing distinct educational systems characterized by unique cultural, economic, and technological contexts. By systematically collecting and analyzing data from these diverse environments, the study aims to identify and understand the multiple factors that contribute to the continued reliance on traditional teaching methods, even when more effective and innovative strategies are available. This deeper understanding seeks to inform policy-making, teacher training, and future research efforts aimed at enhancing educational effectiveness worldwide. The research questions guiding the study are as:

- What are the characteristics of ineffective pedagogy that persist in classrooms in Jordan, Malaysia, and Australia?
- How do educational technologies, particularly AI, influence the adopting of new teaching methods across these countries?
- What challenges do educators face in integrating technological innovations into their teaching practices in these different educational systems?
- How can the dead horse theory metaphor be applied to analyze the resistance to change in teaching methods in these diverse settings?

3.1. Research approach

This research employs a mixed-methods approach [53], integrating quantitative and qualitative data collection and analysis to provide comprehensive insights. By combining statistical data with detailed, descriptive narratives, the study examines the persistence of ineffective pedagogical practices and explores how AI is influencing and transforming teaching methodologies in three distinct countries. The research design is exploratory and comparative, aiming to identify and analyze the similarities and differences among the educational systems of Jordan, Malaysia, and Australia regarding their use of technology and pedagogical innovations. This descriptive study seeks to thoroughly document the current state of pedagogical practices in these countries, highlighting the challenges educators face in adopting modern, technology-enhanced teaching methods and the factors that influence the successful integration of innovative practices.

3.2. Data collection methods

Data for this study were gathered using two main methods: surveys and interviews. Employing these complementary approaches enables triangulation, which enhances the robustness of the findings by capturing both broad trends and in-depth insights across the three countries. The specific procedures and tools used in collecting the data are outlined in the Table 1. A cross-national survey is administered to K-12 teachers, higher education faculty, and school administrators in Jordan, Malaysia, and Australia. The survey collects quantitative data on traditional and modern teaching methods, perceptions of AI, and the challenges faced in integrating new pedagogies. It is distributed online via platforms such as Google Forms or Qualtrics and consists of both closed- and open-ended questions.

Table 1. Data collection methods

Data collection method	Purpose	Participants	Countries
Surveys	To gather quantitative data on the use of teaching methods and technology	K-12 teachers, higher education faculty, and administrators	Jordan, Malaysia, Australia
Interviews	To explore in-depth experiences and challenges faced by educators	Subsample of teachers and administrators	Jordan, Malaysia, Australia

The survey thoroughly investigates several crucial aspects related to technology and pedagogy. It examines the frequency and variety of educational technologies, including AI tools, used in classrooms across different educational settings. The survey also delves into the pedagogical methods educators use,

ranging from traditional lecture-based approaches to more modern, interactive, and student-centered strategies. Furthermore, it explores teachers' perceptions of AI's potential to significantly enhance teaching effectiveness and student learning outcomes. The survey identifies common barriers and challenges that impede the adoption of innovative teaching methods and technologies. Additionally, it evaluates educators' professional development needs to better support technology integration and effective pedagogy in contemporary classrooms. The Table 2 illustrates the key sections of the survey:

In addition to conducting surveys, the research includes in-depth semi-structured interviews with a subsample of 15-20 educators and administrators from each country. These participants are carefully selected based on their survey responses to ensure a diverse range of experiences, particularly regarding the adoption or resistance to new pedagogical methods. The interviews delve into various factors that contribute to the continued use of ineffective teaching practices, the challenges faced in integrating technology into the classroom, and the influence of institutional support systems. The interview questions are designed to explore several key areas, including personal experiences with different pedagogical approaches—covering discussions about traditional versus innovative teaching strategies—as well as examining the integration of AI into teaching and learning processes. The interviews also address perceived benefits and obstacles associated with AI adoption. Furthermore, the role of school leadership is scrutinized to understand how it either supports or obstructs the implementation of new methods. The exploration extends to cultural, institutional, and personal barriers that may hinder the adoption of innovative pedagogies, providing a comprehensive understanding of the complex factors at play. Table 3 highlights the key themes to be explored during the interviews:

Table 2. Survey's key sections

Survey section	Focus
Technology use	Types and frequency of technology usage in classrooms
Pedagogical approaches	Traditional vs. modern teaching methods
AI integration	Perceptions and current use of AI in teaching
Barriers to change	Obstacles to adopting new methods and technologies
Professional development	Educators' need for support and training in technology

Table 3. Key themes in interviews

Interview theme	Focus
Pedagogical methods	Experiences with traditional and innovative methods
AI in education	The integration of AI tools in teaching practices
Institutional support	The role of administrators and institutions in supporting pedagogical change
Barriers to adoption	Challenges to adopting new methods include resistance to change

3.3. Participants

The participants in this study comprise teachers, administrators, and students from Jordan, Malaysia, and Australia. In total, 690 individuals were recruited via online surveys. Additionally, a smaller subsample participated in semi-structured interviews to provide more in-depth insights. The sampling process began with convenience sampling, but later transitioned to random selection based on recommendations from the initial participants. Table 4 presents the demographic characteristics of the survey respondents across the three countries.

Interview participants were selected using purposive sampling to ensure that the qualitative data captured a wide range of experiences related to pedagogical practices and the integration of technology across the three countries. After the survey phase, participants were invited to indicate their willingness to take part in follow-up interviews. From this pool, 15-20 participants per country were chosen based on predetermined criteria, including: i) years of teaching experience, ii) teaching level (K-12 or higher education), iii) level of technology integration reported in the survey, and iv) administrative versus instructional role. This approach ensured that participants represented diverse pedagogical backgrounds and varying levels of engagement with traditional and modern teaching methods. Purposive sampling was selected because it enabled the researchers to identify information-rich cases that could provide deeper insights into the persistence of ineffective pedagogy and the contextual barriers to adopting innovative teaching practices. This transparent, criteria-based selection process strengthens the study's methodological rigor and enhances the credibility and transferability of the qualitative findings. This demographic distribution indicates that the sample is balanced across genders, spans a wide age range, and includes a variety of professional roles. The diversity of participants strengthens the study's capacity to capture broad perspectives on pedagogical practices and the integration of AI across the three educational contexts.

Table 4. Demographic characteristics of participants

Variable	Jordan (n = 250) (%)	Malaysia (n = 230) (%)	Australia (n = 210) (%)	Total (N = 690) (%)
Gender:				
Male	46	41	39	42
Female	54	59	61	58
Age group:				
20-29 years	18	22	16	19
30-39 years	42	45	41	43
40-49 years	28	23	26	26
50+ years	12	10	17	13
Role in institution:				
K-12 teachers	48	45	40	45
Higher education faculty	32	35	38	35
Administrators	20	20	22	21
Years of teaching experience:				
0-5 years	21	19	17	19
6-10 years	33	36	29	33
11-20 years	31	30	34	31
20+ years	15	15	20	17

3.4. Data analysis

Survey data are analyzed using descriptive statistics, such as percentages, to identify trends in the adoption of teaching methods and technology across the three countries. Cross-tabulations compare responses between Jordan, Malaysia, and Australia, highlighting significant differences or similarities. Thematic analysis [54] was used to analyze qualitative interview data. The researchers adopt a deductive approach, identifying pre-existing themes related to the research questions (e.g., barriers to technology integration) and allowing new, emergent themes to arise from the data. NVivo or ATLAS.ti software organizes and codes the qualitative data, identifying patterns and connections across the three countries.

3.5. Ethical considerations

This research was carried out in strict accordance with established ethical standards for studies involving human subjects. All protocols adhered to applicable national laws and institutional guidelines, and the work conformed to the principles outlined in the Declaration of Helsinki, including respect for individuals, beneficence, and justice. Informed consent was secured from all participants prior to their engagement, with clear explanations provided regarding the study's aims, their role, and the data collection process. Participants were informed that participation was voluntary and they could withdraw at any time without repercussions. Consent was obtained electronically for the survey and either verbally or in writing for interviews, following ethical protocols and local practices. To safeguard confidentiality and anonymity, no identifiable personal data were gathered or disclosed. Responses to surveys were anonymized upon receipt, and interview data were anonymized during transcription. Pseudonyms or generic descriptors were used when quoting participants. All data were stored securely on password-protected devices accessible only to the research team, with procedures in place to prevent unauthorized access or misuse. Considering the international scope of the study, cultural sensitivity and contextual appropriateness were prioritized. Survey tools and interview questions were crafted to avoid culturally insensitive language, and participants could respond in their preferred language where applicable (though all responded in English). The study posed minimal risk, as it focused on professional opinions and experiences rather than sensitive personal information. Participants were assured that their responses would remain confidential and not be shared with employers, institutions, or third parties, and would be used solely for scholarly purposes. Ethical considerations regarding data availability were addressed by limiting public access to raw data that could jeopardize participant privacy. Summary findings are transparently reported, and data may be shared upon reasonable request to the corresponding author, subject to ethical and confidentiality considerations.

4. RESULTS

This section presents the findings from surveys and interviews conducted across three countries: Jordan, Malaysia, and Australia. The findings are presented under four major themes: i) characteristics of ineffective pedagogy, ii) the impact of AI and technology, iii) challenges in integrating new teaching methods, and iv) the persistence of ineffective pedagogy as illustrated by the dead horse theory metaphor.

4.1. Characteristics of ineffective pedagogy

The first research question aimed to identify the characteristics of ineffective pedagogical practices across the three countries. The survey responses from K-12 teachers, higher education faculty, and administrators identified several enduring features of traditional pedagogy.

In all three countries analyzed, lecture-based teaching continues to dominate educational practices. This trend is particularly pronounced in Jordan, where 68% of teachers have reported primarily relying on lectures as their main instructional approach as shown in Table 5. This preference for traditional methods highlights a reliance on didactic teaching, which often prioritizes information delivery over more interactive forms of engagement. In contrast, Australia has a slightly more progressive educational environment, with interactive, student-centered methods gaining traction. Specifically, 45% of teachers in Australia reported implementing collaborative work, discussions, and problem-solving activities in their classrooms, compared to only 32% in Jordan. Despite higher engagement in Australia, the overall adoption of interactive methods remains relatively low across all three countries examined. This suggests a need for further development and encouragement of teaching methodologies prioritizing student involvement and active learning outcomes, which could ultimately enhance educational effectiveness in the region.

Concerning using formative and summative assessments, key insights reveal that most teachers across all three countries primarily utilize summative assessments, which are assessment methods that evaluate student learning after an instructional unit, such as final exams, as their primary evaluation method. This trend indicates a pronounced tendency among educators to emphasize end-of-term results rather than the benefits of continuous feedback throughout the learning process, which could help students understand their progress and improve over time. Furthermore, the use of formative assessments, which are designed to monitor students' knowledge and skills during the learning process and to inform instruction, is significantly low. Among the three countries studied, Jordan demonstrates the least engagement with formative assessment practices, with only 45% of teachers incorporating these valuable evaluation methods into their teaching strategies as shown in Figure 1. This disparity highlights a potential area for growth in educational practices within the region.

Table 5. Use of traditional teaching methods (lecture-based teaching)

Country	(%) of teachers using lecture-based teaching regularly	(%) of teachers using interactive/student-centered methods
Jordan	68	32
Malaysia	62	38
Australia	55	45

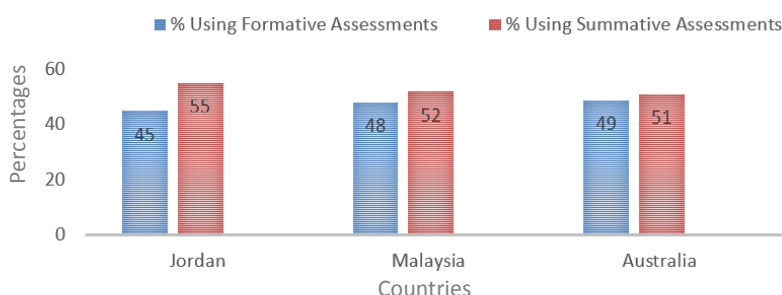


Figure 1. Frequency of use of formative vs. summative assessments

4.2. The impact of AI and technology on teaching practices

The second research question explored how AI and technology are integrated into teaching practices in Jordan, Malaysia, and Australia. The data reveal varying levels of awareness, adoption, and barriers to the use of AI and technology in classrooms.

As Table 6 shows, Australia has the highest level of AI tool awareness, with 65% of its population recognizing them. Additionally, the country has a moderate AI usage rate of 31%, indicating that many individuals understand AI and use it across various capacities. This positive trend can be attributed to several factors, particularly the strong infrastructure that supports technological advancements and the availability of comprehensive support systems for technology adoption within Australian schools. These elements foster an environment where educators and students can effectively integrate AI into their learning and administrative

processes. In contrast, the situation in Jordan reveals a stark disparity, with the lowest levels of AI tool awareness at just 42%. Moreover, the usage rate is even more concerning, at only 18%. Such low figures suggest significant challenges in integrating AI into the country's education sector. This disparity is likely due to several factors, including insufficient technological infrastructure, a lack of professional development opportunities for educators, and inadequate institutional support for understanding and adopting AI. Without addressing these critical areas, Jordan may struggle to improve its standing and to maximize the potential of AI technologies.

As Table 7 shows, a crucial challenge in integrating AI into educational systems across the three distinct countries is the significant barrier posed by inadequate infrastructure. In Jordan specifically, a striking 70% of teachers reported that the lack of proper infrastructure is a primary obstacle hindering the effective implementation of AI technologies within classrooms. Furthermore, the findings reveal that insufficient teacher training is another considerable barrier impacting AI integration. This concern is particularly pronounced in Jordan, where 68% of educators expressed that more training opportunities are necessary. Similarly, 59% of teachers in Malaysia echoed these sentiments, indicating a widespread need for enhanced professional learning and development related to AI tools and methodologies. In Australia, teacher training remains a relevant issue, with 52% of teachers recognizing it as a barrier. However, the context in Australia differs, as there is a more robust institutional response to overcome this challenge. Educational authorities in Australia are actively addressing these issues through professional development programs, demonstrating a proactive approach to equipping teachers with the skills and knowledge needed to effectively incorporate AI into their teaching. These insights underscore the urgent need for improved infrastructure and targeted training initiatives to facilitate the successful integration of AI in education across these nations.

Table 6. Awareness and usage of AI tools in teaching

Country	(%) of teachers aware of AI-based educational tools	(%) of teachers using ai tools regularly
Jordan	42	18
Malaysia	50	28
Australia	65	31

Table 7. Barriers to AI integration in teaching

Barrier	Jordan (%)	Malaysia (%)	Australia (%)
Lack of infrastructure	70	62	58
Lack of teacher training	68	59	52
Resistance to change	65	54	47
Curriculum constraints	60	53	50

4.3. Challenges in integrating new teaching methods

The third research question aimed to identify the challenges educators face when integrating new pedagogies into their teaching. Table 8 shows several barriers emerged regarding time, curriculum, and institutional constraints.

Table 8. Key barriers to adopting new pedagogical methods

Barrier	Jordan (%)	Malaysia (%)	Australia (%)
Time constraints	65	61	58
Rigid curriculum	63	57	60
Lack of institutional support	70	59	55
Cultural resistance to change	62	53	50

Notably, the data indicate that educators in Jordan face significant time constraints, with 65% of teachers reporting that these constraints hinder their teaching effectiveness. In Malaysia, the situation is similarly pressing, with 61% of teachers citing time as a critical factor that restricts their ability to implement innovative teaching strategies. In contrast, Australia reports a slightly lower frequency of 58%, suggesting that while time pressures are indeed felt, they may not be as acute as those experienced by teachers in Jordan and Malaysia. Moreover, teachers across these nations reported that large class sizes and the pressing need to cover a broad spectrum of educational content within a constrained timeframe significantly impede their ability to adopt and integrate new teaching methods effectively. This concern highlights the multifaceted nature of teaching challenges, in which teacher workloads and curriculum delivery expectations contribute to these struggles. Additionally, the rigidity of current curriculum guidelines was acknowledged as a significant barrier to fostering pedagogical innovation across all three countries. Educators in Jordan and Australia

appear to face similar difficulties, with 63% of Jordanian teachers and 60% of Australian teachers noting challenges in aligning modern teaching methodologies with the established national standards. This situation underscores the urgent need to reevaluate curriculum frameworks to accommodate emerging educational practices and support teachers' professional development efforts.

4.4. The dead horse theory and resistance to change

The final research question explored the application of the dead horse theory metaphor, focusing on educators' perceptions of the persistence of ineffective pedagogy and their resistance to adopting new methods. In all three countries surveyed, many educators reported feeling ensnared in a cycle of ineffective pedagogy that hinders their ability to provide meaningful, impactful education to their students as shown in Figure 2. Jordan showed the highest level of acknowledgment of this issue, with 72% of educators expressing their concerns, while Australia had the lowest at 59%. Many teachers expressed a deep sense of being trapped in traditional teaching approaches, such as rote memorization and lecture-based instruction, despite recognizing their shortcomings in fostering student engagement and understanding. This reluctance to embrace innovative teaching strategies and methodologies stems primarily from the various external pressures educators face. These pressures include exam-driven curricula that prioritize standardized testing over creative and critical thinking, and insufficient institutional support that fails to provide teachers with the necessary resources, professional development opportunities, and encouragement to explore new pedagogical practices. Consequently, the educational environment remains stagnant, with many educators feeling powerless to implement the changes they deem essential to enhance student learning outcomes.

As Figure 3 shows, a key insight from recent analyses is a significant challenge in the education sector: the exam-centric system that prevails across countries. This system is a formidable force driving resistance to change in teaching practices. Teachers in the three meticulously examined countries have expressed substantial concerns about the overwhelming pressure they face to prepare their students for exams and standardized assessments. This pressure is not trivial; it severely limits their ability to adopt and experiment with innovative and potentially more effective teaching methods that could enhance student engagement and learning outcomes. Furthermore, the context within which these educators operate is deeply influenced by cultural expectations and an inherent fear of failure. This dynamic is particularly pronounced in Jordan, where teachers have noted the stronghold of traditional, authoritative teaching methods embedded in the local culture. Such deeply rooted practices create a notable reluctance among educators to embrace more student-centered pedagogies that prioritize active learning and engagement over rote memorization and passive knowledge absorption. Consequently, this cultural backdrop not only acts as a barrier to progress but also complicates the transition towards modernized educational methods. Teachers navigate a complex landscape that blends their desire for effective teaching with the ingrained customs and expectations of their educational environment. This hinders the push for meaningful reform in teaching practices that could ultimately benefit their students.

The findings from this study confirm that ineffective pedagogy persists across Jordan, Malaysia, and Australia despite the availability of more effective, technology-enhanced teaching strategies. Teachers continue to rely on traditional methods such as lecture-based teaching, and summative assessments dominate the educational landscape. Integrating AI and innovative teaching methods faces significant barriers, primarily due to a lack of infrastructure, teacher training, cultural resistance, and curriculum constraints. The dead horse theory metaphor is highly relevant in explaining why many educators continue to use outdated methods despite recognizing their ineffectiveness.

These findings highlight the critical need for institutional support, professional development, and curricular reform to encourage the adoption of more effective pedagogies in classrooms across these diverse educational contexts.

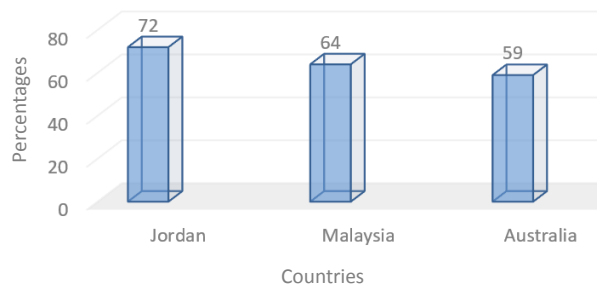


Figure 2. Perceptions of resistance to change (dead horse theory)

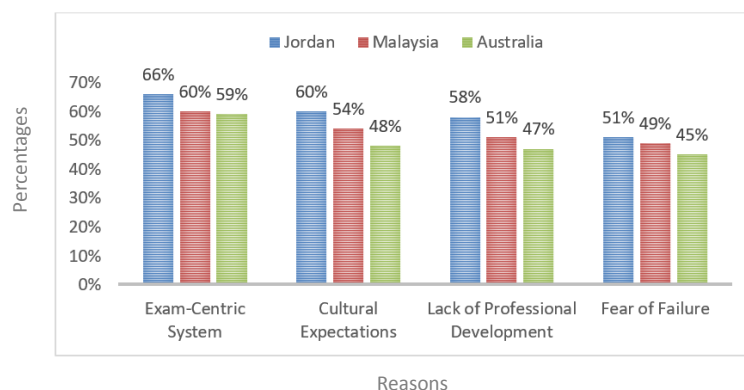


Figure 3. Reasons for resistance to change

5. DISCUSSION

This study set out to explain why ineffective pedagogical practices persist in Jordan, Malaysia, and Australia despite decades of research advocating student-centered, technology-enhanced, and AI-supported teaching. By applying the dead horse theory as an interpretive framework, the discussion moves beyond descriptive comparison to expose the systemic logic that sustains outdated instructional practices across diverse educational contexts. The findings demonstrate that persistence is not a result of ignorance or lack of awareness, but rather the outcome of institutional, cultural, and structural mechanisms that reward continuity over transformation.

Across the three countries, lecture-based teaching and summative assessment remain dominant, even though educators overwhelmingly recognize their limitations [54]–[56]. This paradox supports the central premise of the dead horse theory: institutions often respond to failure by intensifying existing practices rather than abandoning them. In educational systems, this manifests as greater emphasis on curriculum coverage, examination performance, and accountability metrics when learning outcomes or student engagement decline. The data indicate that ineffective pedagogy persists not because it is perceived as effective, but because it is institutionally safe. Traditional methods align closely with standardized assessment systems, centralized curricula, and established cultural expectations of teaching authority. As a result, these methods become self-reinforcing. Educators who conform to traditional practices are less exposed to professional risk, whereas those who experiment with student-centered or AI-enhanced approaches may face uncertainty, misalignment with assessment standards, or a lack of administrative support. This finding aligns with prior research suggesting that pedagogical change is constrained less by teacher attitudes than by systemic design. The dead horse theory, therefore, offers a powerful explanatory lens: educational systems continue “riding” ineffective pedagogies because dismounting would require structural reform rather than superficial adjustment [57].

Although Jordan, Malaysia, and Australia differ substantially in economic capacity, technological infrastructure, and policy orientation, the findings reveal a striking convergence in pedagogical outcomes. This convergence underscores that ineffective pedagogy is not solely a resource problem but a governance and culture problem. In Jordan, pedagogical inertia is most strongly reinforced by exam-centric curricula and limited technological infrastructure. Teachers operate within tightly controlled systems where success is measured primarily through examination results. When faced with disengagement or weak learning outcomes, institutional responses tend to emphasize stricter adherence to syllabi and increased assessment rather than pedagogical redesign. This represents a clear instance of the dead horse dynamic: rather than questioning the effectiveness of lecture-based instruction, the system demands greater efficiency in delivering it. In Malaysia, the persistence of ineffective pedagogy reflects a tension between reform-oriented policy discourse and classroom-level realities. National strategies actively promote digital transformation and innovative teaching, yet rigid curricular frameworks and assessment pressures limit teachers’ ability to implement these goals. The findings suggest that innovation is often symbolic rather than substantive—technology is introduced, but pedagogical logic remains unchanged. This results in what may be described as technological layering, where new tools are placed atop traditional instruction without disrupting its core assumptions. In Australia, pedagogical inertia takes a more subtle form. Higher levels of AI awareness and infrastructure create the appearance of progress, yet actual classroom integration remains limited. Professional development initiatives often focus on tools rather than pedagogy, leading to short-term adoption without long-term instructional change. This represents an advanced manifestation of the dead horse

theory, where reform is continuous but shallow, maintaining the system's legitimacy while preserving existing pedagogical norms.

One of the study's most significant findings concerns the disconnect between AI awareness and meaningful pedagogical integration. While awareness of AI tools—particularly in Australia—is relatively high, actual usage remains modest across all three countries. This gap highlights a critical misconception in educational reform: that the availability of technology naturally leads to pedagogical transformation. The findings indicate that AI is often adopted as an add-on rather than a catalyst for redesigning teaching and learning. Without changes to assessment practices, curriculum structures, and teacher autonomy, AI tools are absorbed into traditional instructional models, reinforcing rather than challenging ineffective pedagogy. This supports existing literature warning against “technology without pedagogy,” where digital tools enhance efficiency but not learning quality. From a dead horse theory perspective, AI becomes another strategy for sustaining ineffective systems-comparable to “buying a faster horse” rather than reconsidering whether the journey itself needs to change. True pedagogical transformation requires reconceptualizing the teacher's role, assessment purposes, and learner agency, none of which can be achieved through technology alone [58], [59].

Cultural expectations emerged as a significant factor in sustaining ineffective pedagogy, particularly in Jordan and Malaysia. In these contexts, traditional teacher authority and exam success are deeply embedded social values. Departing from lecture-based instruction may be perceived as risky, unprofessional, or insufficiently rigorous. Even in Australia, where educational culture is comparatively flexible, risk aversion persists due to accountability pressures and workload constraints.

Institutional support, or the lack thereof, plays a decisive role in shaping teachers' willingness to innovate. The findings suggest that educators are more likely to maintain traditional practices when professional development is fragmented, short-term, or disconnected from classroom realities. Without sustained, practice-oriented support, innovation becomes an individual burden rather than a collective responsibility.

5.1. Implications for educational reform

The discussion highlights that addressing ineffective pedagogy requires systemic rather than incremental reform. Policy initiatives that focus solely on technology provision or teacher training are unlikely to succeed unless accompanied by changes in assessment regimes, curriculum flexibility, and institutional incentives. Across all three countries, reform efforts must prioritize reducing the dominance of high-stakes summative assessment, broadening formative and feedback-oriented evaluation practices, supporting long-term professional learning communities rather than one-off workshops, and aligning AI integration with pedagogical goals rather than administrative efficiency. Without these changes, innovative practices will continue to be absorbed into traditional frameworks, perpetuating the cycle described by the dead horse theory.

5.2. Contribution to theory and research

By applying the dead horse theory across three distinct national contexts, this study extends its relevance beyond metaphor to an analytical framework. It demonstrates that ineffective pedagogy persists not because educators are resistant to change, but because educational systems are structurally designed to reward stability. This contribution is particularly significant in the context of AI in education, where technological optimism often obscures deeper institutional constraints. The findings suggest that future research should move beyond evaluating the effectiveness of specific tools or methods and instead examine how policy, culture, and governance interact to sustain or disrupt pedagogical norms. Only by addressing these underlying dynamics can educational systems move beyond symbolic reform and achieve meaningful instructional change.

5.3. Limitations of the study

Several limitations should be acknowledged when interpreting the findings. First, although the sample size (N=690) is substantial for a cross-national study, it may not fully capture the diversity of educational experiences within each country. Regional, institutional, and disciplinary variations may therefore be underrepresented. Second, cultural differences across Jordan, Malaysia, and Australia may influence how participants interpret survey items and interview questions. While efforts were made to ensure cultural sensitivity, cross-cultural comparison inherently involves interpretive challenges. Third, language and translation issues may have affected data accuracy, particularly for participants responding in languages other than English. Although care was taken to preserve meaning during translation, subtle nuances may have been lost or altered. Finally, the study relies primarily on self-reported data, which may be influenced by social desirability bias or discrepancies between reported and actual classroom practices. Teachers' perceptions of their pedagogical approaches may not fully reflect observed instructional behavior.

5.4. Directions for future research

Future research should build on these findings through longitudinal and mixed-method approaches. Longitudinal studies could examine how pedagogical practices evolve over time in response to policy reforms, professional development initiatives, or technological investment. Classroom-based observational studies would provide valuable insights into how teaching practices are enacted in real settings, helping to validate or challenge self-reported data. Such observations could reveal the subtle ways in which traditional pedagogy persists, even when innovative tools are introduced. Experimental and quasi-experimental studies examining targeted interventions—such as curriculum flexibility pilots, AI-supported formative assessment, or sustained teacher learning communities—would further clarify which strategies are most effective in disrupting systemic inertia. Future research could expand the comparative scope to include additional regions, particularly low-resource or highly centralized systems, to deepen understanding of how the dynamics described by the dead horse theory operate across diverse educational contexts.

6. CONCLUSION

This study explored the persistence of ineffective pedagogy in contemporary educational systems in Jordan, Malaysia, and Australia. It applied the dead horse theory as a framework to understand why these outdated teaching practices continue to dominate despite the availability of more effective alternatives. The findings indicate that despite growing awareness of the limitations of traditional, teacher-centered approaches such as lecture-based teaching and summative assessments, these practices remain deeply ingrained in educational settings across all three countries. The persistence of ineffective pedagogy can be attributed to several interrelated factors, including the dominance of exam-centric systems, cultural expectations, and the lack of infrastructure and professional development. These barriers create resistance to change, limiting the adoption of innovative teaching methods and the integration of emerging technologies, such as AI. The lack of adequate infrastructure and teacher training is particularly pronounced in Jordan. Australia shows greater awareness and adoption of AI tools, though significant barriers remain to their widespread use. Malaysia falls somewhere in between, facing challenges with infrastructure and cultural resistance.

The dead horse theory is a powerful metaphor to explain the persistence of ineffective pedagogical practices. It reflects how educators, despite recognizing the inefficacy of their methods, often continue down the same path due to institutional pressures, fear of failure, and ingrained adherence to traditional norms. While AI and technology can potentially transform teaching and learning, their integration remains slow and uneven. This highlights the need for more targeted interventions that address the underlying systemic barriers. For education systems to move beyond ineffective pedagogy, a concerted effort is needed to break the cycle of inertia. This involves reforming curricula, investing in teacher training, and upgrading technological infrastructure to better integrate innovative teaching methods. Moreover, addressing cultural attitudes towards teaching and learning will be crucial to overcoming resistance to change. By doing so, educators can move beyond the metaphorical “dead horse” and embrace teaching practices that foster critical thinking, creativity, and student-centered learning in the 21st century.

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C : **C**onceptualization

M : **M**ethodology

So : **S**oftware

Va : **V**alidation

Fo : **F**ormal analysis

I : **I**nvestigation

R : **R**esources

D : **D**ata Curation

O : **O**riginal Draft

E : **E**diting

Vi : **V**isualization

Su : **S**upervision

P : **P**roject administration

Fu : **F**unding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

INFORMED CONSENT

We have obtained informed consent from all individuals included in this study.

ETHICAL APPROVAL

The research complied with all the relevant national regulations and institutional policies in accordance with the tenets of the Helsinki Declaration and has been approved by the authors' institutional review board or equivalent committee.

DATA AVAILABILITY

The findings of this study are available on request from the corresponding author, [MAA]. The data, which contain information that could compromise the privacy of research participants, are not publicly available due to certain restrictions.

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