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Smart learning and the law: examining the case of the Dubai Judicial Institute and its inevitable transition towards a modern pedagogical paradigm

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Traditional classroom teaching remains the primary mode of learning at the Dubai Judicial Institute (DJI), a public entity educating aspiring judiciary members and legal professionals. However, the DJI faces specific challenges in transitioning to a smart learning model, including the potential loss of valuable personal interaction, significant financial and technological requirements, and the need for staff training to adapt to new systems. Despite these hurdles, both management and learners at the DJI express readiness and enthusiasm for this paradigm shift, driven by the benefits of flexibility, time efficiency, and increased learner autonomy. This study identifies core challenges in transitioning to smart learning, highlights key andragogical practices, and evaluates the institute's organizational readiness for change. The findings indicate that while the transition requires a phased approach and careful planning, it presents a significant opportunity to enhance judicial training. By embracing smart learning, the DJI can align with Dubai's broader smart government initiatives, ultimately fostering a more efficient, accessible, and innovative justice system.

KEYWORDS

smart learning, law, judicial training, Dubai, smart government

1 Introduction

The Dubai Judicial Institute (DJI) serves as a cornerstone of judicial education in the UAE, providing critical training for judiciary members, legal professionals, and related stakeholders. Historically, the DJI has relied on traditional learning methods, which are defined by face-to-face classroom interactions, lecture-based delivery, and practical exercises such as mock trials. These methods offer valuable opportunities for interpersonal interaction, immediate feedback, and skill-building. However, as highlighted by Smith (2020) and Sneddon (2021), traditional approaches often lack flexibility, scalability, and technological integration, which are increasingly important in a rapidly evolving educational landscape.

Globally, the integration of smart learning systems represents a paradigm shift in education (Huang et al., 2017). Unlike traditional learning, smart learning systems leverage artificial intelligence, data-driven algorithms, and digital tools to deliver personalized, accessible, and dynamic learning experiences (Daniela, 2020; Akour et al., 2023). These systems enable learners to engage with content at their own pace, revisit materials, and benefit from real-time feedback, which is particularly advantageous for adult learners with diverse professional and personal responsibilities (Knowles et al., 2014; Alqodsi et al., 2023). For judicial education, smart learning holds the potential to enhance both the efficiency and accessibility of training

programs, aligning with broader trends in professional development and legal education (Nair, 2024).

The concept of a modern pedagogical paradigm underpins these advancements, combining traditional educational principles with innovative technologies to create learner-centered approaches. As argued by Senge (1990) and supported by recent studies (Daniela, 2020; Akour et al., 2023), this paradigm emphasizes adaptability, collaboration, and the integration of technology to meet the needs of contemporary learners. For the DJI, transitioning to this paradigm is both an opportunity and a necessity, as it aligns with Dubai's broader vision for a smart government and the digital transformation of public services (Efthymiopoulos, 2016; Hill et al., 2023). Despite its potential, the transition to smart learning is not without challenges. These include the loss of interpersonal interaction, significant financial and technological requirements, and the need for comprehensive training for both faculty and learners. By examining the DJI's current practices, comparing them to international best practices, and identifying actionable recommendations, this study aims to bridge the gap between traditional and smart learning in judicial education.

2 Literature review

2.1 Traditional learning in judicial education

Traditional learning, deeply embedded in judicial education systems globally, relies on direct, instructor-led teaching methodologies. These include classroom lectures, role-playing exercises, and case-based learning, which enable learners to develop critical thinking skills and engage in practical applications of legal concepts. At the DJI, traditional learning methods such as mock trials allow learners to immerse themselves in courtroom scenarios, fostering a direct understanding of legal proceedings and professional conduct (Cox, 2013; Hill et al., 2023). While effective in delivering structured and experiential learning, traditional methods face limitations in scalability and adaptability. These approaches are heavily reliant on physical presence and fixed schedules, which often conflict with the time constraints faced by adult learners, particularly those engaged in demanding professional roles (Knowles et al., 2014). Additionally, traditional models lack the technological integration necessary to prepare learners for the increasingly digitalized legal environments characterizing modern judicial systems (Smith, 2020; Sneddon, 2021). Internationally, judicial education institutions have noted similar limitations. For example, Esposito et al. (2014) found that Italy's judicial training systems struggled to adapt to changing professional demands due to their rigid reliance on traditional teaching. The findings suggest that such systems require modernization to remain relevant and effective in dynamic legal contexts.

2.2 Modern smart learning systems

The rise of smart learning systems represents a paradigm shift in how education, particularly professional education, is delivered and experienced. Smart learning systems leverage advanced technologies such as artificial intelligence (AI), big data analytics, and virtual reality (VR) to create interactive, personalized, and scalable learning environments. These systems are characterized by their ability to adapt to individual learning styles, monitor progress in real time, and provide immediate feedback, enhancing learner engagement and retention (Daniela, 2020; Akour et al., 2023). In legal education, smart learning systems offer unique advantages. For instance, platforms incorporating VR can simulate courtroom environments, enabling learners to practice trial procedures and argumentation without the constraints of physical settings (Nair, 2024). Similarly, AI-driven learning platforms can customize content delivery based on the learner's prior knowledge, ensuring a more tailored educational experience (Alqodsi et al., 2023). These tools align closely with the principles of andragogy, which emphasize learner autonomy, relevance, and practical application (Knowles et al., 2014). However, the transition to smart learning is not without challenges. One significant concern is the potential reduction of face-to-face interactions, which are vital in disciplines requiring interpersonal skills and professional networking, such as judicial education (Sneddon, 2021). Additionally, the implementation of smart learning systems requires substantial financial investment in technology infrastructure, faculty training, and ongoing maintenance, posing a significant barrier for institutions with limited budgets (Efthymiopoulos, 2016).

2.3 Technologies enabling smart learning

Smart learning systems are underpinned by an array of advanced technologies that collectively transform the educational landscape. AI plays a central role, enabling predictive analytics to identify learning gaps and recommend personalized interventions (Akour et al., 2023). For example, adaptive learning systems use AI algorithms to adjust content complexity based on individual performance, ensuring that learners are neither overwhelmed nor under challenged (Daniela, 2020). VR and augmented reality (AR) technologies further enhance smart learning by providing immersive, hands-on experiences. In judicial education, these technologies are used to simulate courtroom settings, allowing learners to practice legal procedures and decision-making in a risk-free environment (Nair, 2024). Learning management systems (LMS), such as Blackboard and Moodle, provide the foundational infrastructure for smart learning, offering tools for content delivery, performance tracking, and collaborative learning (Alqodsi et al., 2023). Furthermore, data security is a critical concern in the adoption of these technologies, particularly in sectors like judicial education, where confidentiality is paramount. Ensuring robust cybersecurity measures is essential to protect sensitive learner and institutional data (Efthymiopoulos, 2016).

2.4 Comparison of challenges and approaches in judicial education

Judicial education institutions worldwide face similar challenges in modernizing their training systems. For example, the National Judicial Institute (NJI) in Canada and the Judicial College in the United Kingdom have adopted blended learning models that integrate traditional and smart learning approaches. These models aim to balance the interpersonal benefits of face-to-face interactions with the flexibility and accessibility of online learning platforms (Sneddon,

2021). In Canada, the NJI employs online modules for foundational knowledge and reserves in-person sessions for complex topics requiring discussion and collaboration. Similarly, the Judicial College in the UK uses e-learning tools alongside traditional classroom training to accommodate the diverse needs of judges across the country (Smith, 2020). These approaches demonstrate the importance of a phased transition, which allows institutions to address financial, technological, and cultural barriers incrementally. For the DJI, lessons can be drawn from these international examples. Dubai's strong emphasis on smart governance and digital transformation provides a supportive context for adopting smart learning systems. However, challenges such as resistance to change, high implementation costs, and the need for comprehensive training must be addressed through strategic planning and stakeholder engagement (Bhuiyan et al., 2023).

2.5 Modern pedagogical paradigm

The modern pedagogical paradigm reflects a shift from traditional, teacher-centered approaches to learner-centered models that integrate technology and innovation. This paradigm emphasizes collaboration, critical thinking, and adaptability, aligning with the needs of contemporary learners and the demands of a rapidly changing professional landscape (Senge, 1990; Daniela, 2020; Hill et al., 2023). In the context of judicial education, the modern pedagogical paradigm incorporates principles of andragogy, which highlight the importance of relevance, practical application, and learner autonomy (Knowles et al., 2014). For example, smart learning systems enable learners to access resources on-demand, engage with interactive content, and collaborate with peers and instructors in virtual environments. This flexibility is particularly valuable for adult learners, who often balance education with professional and personal responsibilities (Alqodsi et al., 2023). By adopting this paradigm, the DJI can enhance its training programs, making them more responsive to the needs of its learners and better aligned with the broader goals of Dubai's smart government initiatives. However, achieving this transition requires a comprehensive understanding of the opportunities and challenges associated with integrating technology into judicial education, as well as a commitment to continuous innovation and improvement.

3 Methodology

This study employed focus group discussions (FGDs) as the primary method for data collection, a technique particularly suited for understanding complex and context-specific phenomena such as the transition to smart learning at the DJI. FGDs enable participants to discuss, debate, and co-construct ideas in a collaborative setting, providing rich qualitative data that captures diverse perspectives and nuanced insights (Saunders et al., 2016). The FGD guide was developed through a systematic process that included a comprehensive review of relevant literature and consultations with subject-matter experts. Key sources, such as studies on judicial training (Casanovas et al., 2009) and principles of adult learning (Knowles et al., 2014), informed the framing of questions to ensure alignment with the theoretical and practical dimensions of the study. Input from professionals in legal education and smart learning further refined the

questions to ensure they addressed context-specific concerns. The questions were structured to explore three main areas:

1. Current Perceptions: Participants' views on the advantages and disadvantages of traditional learning methods at the DJI.
2. Anticipated Challenges: Challenges participants expected to encounter during the transition to smart learning, including technical, financial, and organisational barriers.
3. Organizational Readiness: Perceptions of DJI's preparedness for adopting smart learning, including staff training needs and technological infrastructure.

Examples of leading questions included:

- "What do you perceive as the main strengths of traditional learning at DJI?"
- "What challenges do you anticipate in transitioning to smart learning?"
- "How do you see the role of smart learning aligning with DJI's mission and goals?"

These questions were open-ended to encourage free-flowing discussions while ensuring alignment with the study's objectives. The guide underwent pilot testing with a small sample group to refine wording, sequencing, and scope, ensuring clarity and relevance.

The study participants included two distinct groups: learners (Group A) and management (Group B). Group A: Comprised trainees enrolled in judicial and legal training programmes at the DJI, representing a range of professional domains, including the Judicial Military Diploma and the Human Trafficking Diploma. Participants were between the ages of 25 and 45, with a roughly equal distribution of male and female trainees (see Table 1).

Group B: Included staff from DJI's administrative, training, research, and marketing departments. Participants ranged in age from 30 to 55, with an approximately equal gender split. This group provided insights into the organizational and operational challenges associated with transitioning to smart learning (see Table 2). Participants were recruited using purposive sampling to ensure representation across diverse roles and experiences. A total of five FGDs were conducted: two with Group A and three with Group B.

The General Director participated in discussions as a key stakeholder and contributor to organizational strategy. To mitigate the potential influence of the General Director's opinions on other participants, FGDs were structured to ensure an open and inclusive environment. Specifically, the General Director's contributions were noted separately from group discussions to distinguish his perspectives from those of other participants. Additionally, facilitators encouraged all participants to express

TABLE 1 Group A—learners.

Date	Time	# of attendees	Diploma/ program
Nov 15th, 2018	10:16 am (27 min)	4	Human Trafficking Diploma
Nov 29th, 2018	10:38 am (39 min)	3	Military Judicial Diploma

TABLE 2 Group B—management.

Date	Time	# of attendees	Department
Oct 30th, 2018	10:25 am (47 min)	3	Marketing and Media affairs
Oct 30th, 2018	11:31 am (50 min)	3	Research and Studies
Nov 5th, 2018	11:30 am (48 min)	2	Admin and Financial Affairs

their opinions freely and validated differing viewpoints to minimize conformity or deference effects. Furthermore, the analysis process accounted for the hierarchical position of the General Director by coding his statements separately and examining their potential impact on group dynamics. Also, the researchers maintained reflexivity during analysis to ensure the General Director's views did not unduly influence the interpretation of findings. Triangulation was used to corroborate data from multiple sources and reduce bias.

Data saturation, a critical indicator of the adequacy of qualitative data collection, was systematically monitored throughout the study. After analysing the transcripts from the second FGD with learners and the third FGD with management, it became evident that no new themes, insights, or perspectives were emerging. At this point, data saturation was deemed to have been reached, ensuring the validity and comprehensiveness of the findings (Saunders et al., 2016). The transcribed data were analysed using NVivo, a qualitative data analysis software that facilitates systematic coding and theme identification. A hybrid approach to thematic analysis was adopted, combining inductive and deductive coding. Predefined themes based on the research objectives and literature review were used as a starting point, while new themes that emerged during the analysis were added iteratively. Multiple cycles of review and refinement were conducted to ensure accurate categorization and interpretation of the data.

Ethical approval for the study was obtained prior to data collection. Participants were provided with detailed information about the study's objectives, procedures, and their rights, including the right to withdraw at any stage without consequence. Informed consent was obtained, and all data were anonymized to protect participants' confidentiality. By integrating these rigorous methodological practices, this study ensures transparency, replicability, and credibility in its findings. The approach not only captures the complexities of the DJI's context but also contributes valuable insights to the broader discourse on the application of smart learning in judicial education.

4 Results and discussion

4.1 Technology-focused themes

4.1.1 Loss of human interaction

A primary concern among participants was the potential loss of human interaction during the transition to smart learning.

Group A, comprising learners, stressed the value of direct engagement with instructors, describing it as an integral part of their educational experience. As one participant explained, *"Students are usually affected by the person giving the information. I do not think that I would be affected by a lecturer or someone teaching me from behind a screen. I would not feel its value."* This sentiment reflects the findings of Sneddon (2021), who noted that interpersonal communication plays a critical role in fostering professional skills, particularly in fields like judicial education. The General Director echoed this concern, highlighting the emotional and motivational impact of in-person learning, stating, *"It is always comforting to know that you deal with a human; there are emotions involved."*

This concern aligns with broader research on the limitations of fully digital learning environments, where the absence of real-time, face-to-face interactions can hinder relationship-building and engagement (Charbonneau, 2002). The potential lack of spontaneous dialogue and immediate feedback in smart learning models could be especially problematic for judicial training, which often involves complex, situational learning.

4.1.2 Budgetary constraints and infrastructure needs

Participants across both groups identified financial and infrastructural challenges as significant obstacles to implementing smart learning systems. Group B, comprising management staff, recognized the substantial investment required for upgrading technological infrastructure, training staff, and maintaining new systems. The General Director acknowledged the practical implications, stating, *"It will boil down to the priorities of Dubai Government—whether they would want to make the financial commitment required for the transition."* This observation is consistent with Efthymiopoulos (2016), who emphasized that successful transitions to smart systems in public institutions require long-term strategic investments.

Beyond financial constraints, participants also highlighted the need for additional manpower and technical expertise. Group B expressed confidence in the capability of DJI staff to meet these challenges through phased implementation and targeted training programs. This reflects the findings of Akour et al. (2023), who noted that staff development is a critical factor in ensuring the success of technology-driven educational initiatives.

4.1.3 Data security concerns

Data security emerged as a critical theme, particularly among Group A participants, who were concerned about the protection of their personal information. One Judicial Military group member highlighted the importance of awareness and individual responsibility, stating, *"Users need to know their limitations, what's ok to do and what's not… because all their work would be on that site."* These concerns underscore the broader challenges associated with integrating digital technologies in education, where cybersecurity risks can undermine trust and user adoption (Efthymiopoulos, 2016).

Group B participants reassured learners that the DJI already possessed expertise in cybersecurity, which could be further developed to support the transition to smart learning. The emphasis on robust data protection measures aligns with Dubai's broader smart governance initiatives, which prioritise cybersecurity as a foundational element of digital transformation.

4.2 Andragogy-focused themes

4.2.1 Preserving experiential learning

Participants in both groups underscored the importance of experiential learning, which is central to judicial training at the DJI. Group A participants appreciated the scenario-based learning methods employed at the institute, such as mock trials and formal trial games. As one participant explained, *"We give them a case and ask them to solve it so it is mostly like scenario-based learning."* This approach aligns with Knowles et al.'s (2014) principles of adult learning, which emphasize relevance, problem-solving, and the practical application of knowledge.

The General Director highlighted the value of maintaining these practices in a smart learning environment, suggesting that technologies such as VR could be used to simulate courtroom scenarios while retaining the experiential aspects of traditional methods. This perspective echoes Daniela's (2020) findings on the potential of VR to enhance experiential learning in professional education.

4.2.2 Personalized learning and flexibility

Participants recognized the potential of smart learning to provide personalized and flexible educational experiences. One Judicial Military Diploma participant noted, *"In my own time, I can go back to the recorded lecture and understand it better."* This flexibility aligns with the findings of Akour et al. (2023), who highlighted how personalized learning systems empower learners to manage their education at their own pace and revisit content as needed.

Management participants also identified the potential for smart learning to reduce logistical challenges, such as travel time. A Group A participant described the practical benefits, stating, *"With this technique, you get breaks, half an hour for example, so I can finish up my things and attend the next lecture."* These insights reinforce the value of learner-centered approaches in creating more inclusive and efficient learning environments (Daniela, 2020).

4.2.3 Control over learning

Both groups acknowledged the role of smart learning in enhancing learner autonomy. A Judicial Military participant expressed enthusiasm for the added convenience, stating, *"For the advantages, a person can attend from anywhere… it was hard to reach a certain place."* This supports the argument made by Sharples et al. (2014) that seamless learning technologies enable education to occur across locations and contexts, empowering learners to take greater control of their learning.

4.3 Connecting findings with literature

The findings of this study highlight the dual nature of challenges and opportunities associated with integrating smart learning at the DJI. Concerns about the loss of human interaction and data security echo broader challenges identified in the literature, including Sneddon's (2021) emphasis on the irreplaceable value of face-to-face engagement and Efthymiopoulos's (2016) focus on cybersecurity as a critical enabler of digital transformation. At the same time, the participants' enthusiasm for personalized and flexible learning opportunities aligns with the principles of andragogy and the benefits

of smart learning documented by Daniela (2020) and Akour et al. (2023). The study's findings also support the phased approach advocated by Smith (2020), demonstrating that gradual implementation can help institutions address logistical and cultural barriers while building capacity for change.

While this study provides valuable insights, it is not without limitations. The sample size was relatively small, comprising five focus group discussions with a total of 15 participants. This limits the generalizability of the findings, as the perspectives captured may not fully represent all stakeholders at the DJI. Additionally, the hierarchical role of the General Director may have influenced the responses of other participants. Although measures were taken to mitigate this impact, such as coding the General Director's contributions separately, the potential for deference bias remains. Future studies could address this limitation by employing anonymous surveys or conducting separate interviews with senior stakeholders. Lastly, the study's focus on the DJI limits its applicability to other contexts. While comparisons with international examples were drawn, further research is needed to explore how cultural, organizational, and technological factors influence the transition to smart learning in judicial education.

5 Conclusion

This study explored the readiness of the DJI to transition from traditional classroom-based learning to a smart learning model. Several key findings emerged from the research, each providing critical insights into the opportunities and challenges associated with this transformation. The findings highlighted that the DJI's current reliance on traditional teaching methods, while effective in fostering interpersonal interaction and practical skills, is increasingly misaligned with the needs of its learners and the broader objectives of Dubai's smart government initiatives. Learners and management identified the flexibility, time efficiency, and autonomy afforded by smart learning as significant advantages, aligning with global trends in legal education and professional development. However, the potential loss of human interaction, which is highly valued in judicial training, emerged as a primary concern. This underscores the need to integrate smart learning in ways that preserve or simulate these critical interpersonal dynamics (e.g., through blended learning models or advanced interactive technologies).

One of the study's core recommendations is a phased approach to the transition. This recommendation stems from findings that both learners and management expressed the need for adequate time, resources, and training to adapt to new systems. A gradual implementation allows stakeholders to address challenges incrementally, such as technology infrastructure, staff training, and learner adaptation. This approach is crucial to maintaining continuity and minimizing disruption. The research also highlighted the critical importance of data security, with participants emphasizing the need for robust measures to protect sensitive learner information. This concern reflects broader challenges faced by educational institutions transitioning to technology-driven environments. Building on Dubai's strong cybersecurity culture, the DJI can mitigate these risks through enhanced protocols and continuous monitoring. From an organizational perspective, the study found that the DJI embodies many characteristics of a learning organization, such as teamwork, collaboration, and a culture of continuous learning. These strengths

position the institute well for innovation and adaptability. However, financial constraints and resource allocation were identified as significant hurdles. Policymakers must prioritize funding to ensure that the transition to smart learning is adequately supported.

Despite these challenges, the opportunities presented by smart learning for the DJI and the wider Dubai justice system are considerable. Smart learning offers a pathway to modernize judicial training, making it more accessible, flexible, and globally competitive. By leveraging technology, the DJI can enhance learning outcomes, align with Dubai's vision for a smart government, and strengthen its role as a leader in judicial education. In conclusion, the findings of this study provide an evidence-based foundation for the DJI to navigate its transition to smart learning. While the challenges are significant, they are surmountable through strategic planning, phased implementation, and sustained investment. The study not only addresses a critical gap in the literature on judicial education but also offers actionable recommendations with potential implications for similar institutions globally. Future research should further explore the perspectives of faculty and policymakers to develop a comprehensive roadmap for embedding smart learning in judicial training systems.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Hamdan bin Mohammed Smart University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

HA-M: Conceptualization, Data curation, Resources, Validation, Writing – original draft, Writing – review & editing. KA: Conceptualization, Funding acquisition, Investigation, Methodology, Supervision, Validation, Writing – original draft, Writing – review & editing. TC: Formal analysis, Project administration, Software, Validation, Visualization, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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