

# The Role of Digital Capability and Online Credential Adoption Within the UAE Higher Education Institutions: A Systematic Literature Review

Fatema Ali Nasser Ali Aleissae, Ahmad Rizal Bin Madar

Faculty of Technical and Vocational Education University Tun Hussein Onn Malaysia (UTHM) Parit Raja, Batu Pahat, Johor., Malaysia

DOI: <https://dx.doi.org/10.47772/IJRISS.2025.908000252>

Received: 30 July 2025; Accepted: 04 August 2025; Published: 05 September 2025

## ABSTRACT

Digital capability and online credential adoption are pivotal in transforming higher education globally. In the United Arab Emirates (UAE), these elements are particularly significant due to the nation's strategic emphasis on digital innovation and education. This systematic literature review explores the current state of digital capabilities among educators and the adoption of online credentials within UAE higher education institutions (HEIs), identifying key factors, challenges, and future directions. Digital capability encompasses the skills, knowledge, and attitudes required to effectively use digital technologies for teaching, learning, and administrative purposes. In the context of higher education, it enables educators to enhance pedagogical practices and engage students in innovative ways. The research highlights the role of digital capability and online credential adoption within the UAE Higher Education Institutions. Particular emphasis is placed on the role of emerging states like the UAE in leveraging digital capability to bolster their international standing through innovative approaches, including hosting mega-events and employing digital capability. The findings underscore the dynamic interplay between these elements, offering insights into how digital capability strategies can be tailored to align with enable sustainable digital credentialing in line with the UAE's National Strategy for Higher Education 2030. The research offers practical implications for higher education institutions, policymakers, and faculty development programs, with a focus on enhancing digital competencies and promoting self-efficacy to support the digital transformation of education.

**Keywords:** Digital Capability, Online Credential, Individuals' Digital Literacy, Higher Education Institutions.

## INTRODUCTION

ICT DSC has transformed the higher education sector, UAE. This shift toward digitization has created more accessible and flexible learning environments but has also introduced multifaceted challenges that hinder the achievement of optimal educational outcomes and student engagement, especially in distance education. UAE higher education institutions face difficulties in adapting to the swift changes in digital technologies, which impacts their operational stability and continuity. Assessing the effectiveness of digital tools, such as Blackboard Learn, and addressing the divergence in faculty perceptions regarding technology integration is crucial to enhance the learning experience.

ICT and the Digital Supply Chain (DSC) has significantly reshaped the landscape of higher education, fostering a shift toward more digitized and accessible learning environments. UAE, this digital transformation is accompanied by various challenges, including the effective integration of digital technologies within higher education institutions (Khan et al., 2021; Hani Jarrah, 2021). Digital disruption poses significant challenges to the continuity and operational stability of these institutions, given the swift evolution of digital technologies and the complexities involved in adapting to these changes (Gernal et al., 2023). The adoption of digital tools and platforms, such as Blackboard Learn, has become crucial for enhancing the learning experience, yet disparities in faculty readiness and perceptions highlight a gap between potential benefits and actual utilization in the teaching and learning processes (Almansoori, 2021; Monteiro, 2019).

The problem of uneven digital literacy and inconsistent adoption of online credentials directly affects faculty performance, student engagement, and institutional competitiveness in the UAE's higher education sector. Despite investments in educational technologies, many faculty members remain uncertain about how to integrate these tools effectively, while students face challenges in recognizing the value and credibility of online credentials.

This digital evolution within higher education institutions not only requires the integration of technology but also calls for a deeper understanding of digital capability, literacy, and innovation adoption among faculty and students. The challenges extend to identifying how digital transformation in the education sector can contribute to a competitive advantage and how digital literacy and citizenship influence this process (Shehadeh et al., 2023; Lubis et al., 2022). However, there is a lack of empirical research that examines how digital literacy mediates the relationship between institutional digital capability and the successful adoption of online credentials, especially in the UAE context highlighting a significant research gap.

The critical issue lies in addressing faculty and student readiness, digital literacy disparities, and the impact of these factors on educational outcomes and institutional competitiveness. As the global education landscape and the UAE-specific context continue to embrace digital advancements, understanding the effects of ICT and DSC on higher education becomes vital. This understanding is imperative for adapting educational models to maximize the benefits of digital platforms and align digital transformation efforts with learners' needs and aspirations (Singh et al., 2023; Hiasat & Radaideh, 2023; Miao et al., 2023).

Therefore, this study focuses on a clearly defined research problem: the insufficient integration of online credentials within UAE higher education institutions due to disparities in digital literacy and institutional digital capabilities. By narrowing the scope to these core factors, the research aims to provide targeted insights that can support the development of practical strategies to improve digital adoption and educational outcomes.

This study aims to explore these intricate challenges and implications associated with adopting and integrating digital technologies in UAE higher education institutions. It seeks to uncover the barriers to effective digital adoption, examine the disparities in digital literacy among faculty and students, and analyze the influence of these factors on educational outcomes and institutional competitiveness in an ever-evolving digital landscape. In doing so, the study directly informs institutional decision-making, contributes to policy development, and provides a practical framework that enhances the readiness and effectiveness of online credential adoption in the UAE.

## LITERATURE REVIEW

### 2.1 Factors Addressed in This Study

The rapid shift toward digitalization in education, accelerated by global disruptions like the COVID-19 pandemic, has underscored the importance of digital capability and verifiable online credentials. In the UAE, where higher education is a critical component of national development goals, digital transformation has become a policy priority. This review aims to consolidate existing evidence on how UAE HEIs are navigating digital capabilities among educators and adopting online credentials.

#### 2.1.1 Digital Capability in UAE HEIs

Digital capability encompasses an educator's proficiency in using digital tools for teaching, assessment, collaboration, and professional development. Several studies, including assessments based on the DigCompEdu framework, indicate that while foundational digital literacy is widespread, advanced competencies related to content creation, digital pedagogy, and student engagement remain underdeveloped. Professional development programs are often ad hoc and lack alignment with institutional strategies. Within the UAE, the importance of digital capabilities has become increasingly evident as higher education institutions strive to adapt to technological advancements and meet the demands of a digitally driven educational ecosystem. Digital capabilities are essential for building a strong technological foundation within higher education. Faculty members' LMS such as Blackboard Learn. Almansoori (2021) highlights that faculty with advanced digital

capabilities are better equipped to integrate these platforms into their teaching practices, ultimately improving student engagement and academic performance. Similarly, Abbas and Khalid (2023) argue that digital capabilities serve as the backbone of an institution's ability to navigate digital transformation, which is particularly critical in the fast-evolving educational landscape of the UAE.

Students' digital readiness is equally significant in ensuring the effectiveness of e-learning platforms. Alblooshi and Hamid (2019) emphasize that students' ability to engage with digital learning tools is influenced by their perceived usefulness and comfort with technology. This underscores the need for higher education institutions to invest in initiatives that foster digital literacy and capabilities among students, addressing their diverse needs and ensuring equitable access to digital resources. By focusing on both faculty and students, institutions can create an inclusive digital environment that maximizes the potential of e-learning tools. The components of digital capabilities are broad and multifaceted, encompassing various critical skills. Despite these challenges, the transformative potential of digital capabilities cannot be overlooked. Ahmed and Khan (2021) argue that equipping faculty and students with advanced digital skills not only improves academic outcomes but also fosters innovation and adaptability in the face of rapid technological changes. Such efforts can bridge skill gaps, reduce resistance to technological adoption, and create an environment conducive to lifelong learning.

Key barriers to integration include a lack of unified digital transformation strategies, inconsistencies in digital competence among staff, and limited interoperability between platforms. Conversely, government support, the presence of pilot projects, and increasing student demand for digital transparency are identified as critical enablers.

Table 1 Digital competence level in UAE HEIs

No.	Source	Key Insight
1	Evaluation of digital competence level among educators in UAE HEIs	Assessed digital competencies using the DigCompEdu framework, identifying areas for improvement among faculty.
2	Blockchain-based framework for academic certification in the UAE	Discussed the implementation of blockchain platforms like Shahada and Musadaqa for secure online credentialing.
3	Digital Transformation in Higher Education: A Framework for Maturity Assessment	Highlighted the absence of unified digital strategies in UAE HEIs, leading to fragmented digital transformation efforts.

In a qualitative study, Almansoori (2021) interviewed 32 faculty members across three UAE universities to explore the integration of Learning Management Systems (LMS), such as Blackboard Learn. The findings showed that faculty members with higher ICT proficiency reported improved instructional design, better course management, and enhanced student interaction. Participants highlighted increased comfort and engagement with LMS tools when sufficient training and digital support were provided. Alblooshi and Hamid (2019) conducted a survey-based study targeting undergraduate students in two UAE universities to assess digital readiness. Their results indicated that students with higher ICT skills navigated e-learning platforms with greater confidence and satisfaction. The study emphasized that ICT proficiency directly correlates with students' ability to fully utilize online educational resources, affecting performance and engagement.

Ashour (2020) advocates for policies that support literacy development, while Abdellatif et al. (2023) emphasize continuous professional development for faculty to model and teach these skills. Embedding these literacies into institutional culture will ensure that UAE higher education systems produce digitally fluent graduates capable of thriving in a knowledge-based economy.

Adaptive learning technologies also play a pivotal role in advancing digital learning and development. Ibrahim et al. (2023) emphasize the importance of data-driven learning systems that provide personalized feedback and recommendations to learners based on their performance and progress. These systems enable educators to

identify areas where students may need additional support and tailor instruction accordingly. The implementation of such technologies in UAE universities has shown promising results in improving student engagement and learning outcomes, as evidenced by studies such as Ahmed and Khan (2021). Adaptive technologies not only enhance the learning experience but also contribute to more efficient and effective teaching practices.

Digital identity in higher education is increasingly critical. Almansoori (2021) highlights that students and faculty in UAE universities utilize platforms like Blackboard Learn, Microsoft Teams, and LinkedIn to communicate, share resources, and showcase achievements. Abbas and Khalid (2023) assert that developing a credible digital identity boosts students' employability and allows faculty to build international reputations through research visibility and online collaboration.

### 2.1.2 Online Credential Adoption

Online credentials such as digital badges and blockchain-based certificates are emerging as tools to enhance academic integrity and lifelong learning. In the UAE, initiatives like Shahada and Musadaqa have led the way in implementing secure, verifiable credentialing systems. However, their adoption varies widely across institutions, influenced by administrative readiness, faculty awareness, and infrastructural capacity.

The adoption of online credentials, including digital badges, micro-credentials, and certifications, has gained traction globally, offering learners flexible pathways to demonstrate specific skills and competencies relevant to the digital economy. In the UAE, where higher education institutions are actively integrating digital transformation initiatives, online credentials are viewed as a promising tool to bridge skills gaps and align academic offerings with industry needs. However, concerns regarding the legitimacy, relevance, and institutional integration of online credentials persist, limiting their widespread adoption.

Abbas and Khalid (2023) argue that online credentials align with the UAE's emphasis on building a knowledge-based economy, offering scalable opportunities for skill development and lifelong learning. For students, they provide a means of acquiring specialized skills alongside traditional degrees, while for educators, they support digital literacy and the development of advanced teaching strategies. Despite these advantages, Alblooshi and Hamid (2019) note a persistent hesitancy among faculty and students to embrace online credentials fully, largely due to concerns about their legitimacy, value, and relevance compared to traditional qualifications.

One of the most significant concerns about online credentials is their perceived lack of credibility. Ahmed and Hassan (2021) highlight that both students and employers in the UAE often view online certifications as less reliable than traditional degrees. This skepticism stems from the absence of standardization and quality assurance frameworks governing the creation and awarding of online credentials. Employers may question whether online certifications accurately reflect the skills and competencies required for job performance, leading many students to undervalue these credentials despite their growing popularity in global markets. Without efforts to enhance the perceived legitimacy of online credentials, their adoption may remain limited. Another concern is the relevance of online credentials to academic and professional goals. Almansoori (2021) points out that students in UAE universities often struggle to see the practical benefits of online credentials for their career development. This is often due to a lack of alignment between the skills addressed by these credentials and the specific needs of the UAE job market. Similarly, Abdellatif et al. (2023) argue that many online credential programs fail to address the demands of local industries, which reduces their attractiveness to students seeking region-specific employment opportunities. This misalignment further reinforces the perception that online credentials are supplementary rather than essential to academic and professional growth.

## 2.2 Factors Previously Studied

According to Naqvi and Iqbal (2023), in a study on teachers in distance learning environments, found that ICT proficiency had a significant positive impact on work performance and instructional quality. Their research emphasizes that digital competence not only improves teaching effectiveness but also enhances task management, particularly in virtual settings. Similarly, Paul and Roy (2023) conducted a survey of postgraduate students and concluded that higher levels of ICT proficiency were directly linked to increased usage of educational technologies, academic satisfaction, and digital engagement. Their findings underscore the

universality of ICT proficiency as a key driver of academic success and digital productivity, regardless of regional context.

In a similar vein, Dangprasert (2023) conducted a design-based research study in Thailand to develop a learning activity model focused on digital technology and content development. The study involved iterative design and evaluation cycles with faculty and students. The findings indicated that when digital learning environments incorporated real-world project development and peer collaboration, students showed significantly improved engagement and content mastery. The study emphasized that both pedagogical design and faculty digital fluency are essential components of effective digital learning.

From an international perspective, Velu (2022) conducted a survey-based study in Indian universities examining the mediating role of ICT in fostering innovative problem-solving. The research employed a structural equation modeling (SEM) approach and found that ICT proficiency significantly enhances innovation when combined with design thinking strategies. This supports the idea that digital problem-solving skills are essential for modern academic and professional innovation. Furthermore, partnerships with industry can connect students with real-world digital challenges, as Alajmi et al. (2025) emphasize in their framework, where digital capabilities are seen as a prerequisite for participating in innovation-driven labour markets.

Internationally, Mthethwa et al. (2023) explored the use of decentralized identity and verifiable credentials in an education context. Through system design and user evaluation, they emphasized the psychological reassurance users gained from owning and managing their credentials securely. This supports the idea that digital identity management, when handled autonomously and transparently, contributes positively to users' digital wellbeing.

### 2.3 The Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT, developed by Venkatesh et al. (2003), is a comprehensive model that combines elements from various theories of technology adoption to explain how and why individuals accept and use new technologies. UTAUT is particularly relevant in the context of UAE higher education, where institutions are adopting digital innovations such as online credentials as part of a broader push toward digital transformation. The theory identifies four key constructs PE, Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) that influence individuals' behavioral intentions and actual usage of technology. These constructs provide a robust framework for understanding the factors that encourage or hinder the adoption of online credentials by students, faculty, and administrators in UAE universities. **The first construct, PE**, refers to the extent to which individuals believe that using a particular technology will improve their performance or help them achieve specific goals. In the context of online credentials, PE is critical as it reflects whether faculty and students perceive these systems as valuable tools for achieving better academic or professional outcomes. Students in UAE higher education are more likely to adopt online credentials if they believe that earning certifications will enhance their employability, provide a competitive advantage, or align with the demands of the labor market. Similarly, faculty members may perceive online credentials as beneficial if they believe these tools can enhance student engagement, improve learning outcomes, and boost institutional reputation. For example, Ahmed and Khan (2021) emphasize the importance of providing evidence of the value of online credentials, such as demonstrating how they increase job placement rates or showcasing endorsements from employers. This evidence helps enhance PE by reinforcing the belief that adopting online credentials leads to tangible benefits.

**The second construct, EE**, focuses on the perceived ease of use of a technology. For both students and faculty in UAE universities, the usability of online credential platforms is a significant factor influencing adoption. If these platforms are intuitive, user-friendly, and require minimal effort to navigate, users are more likely to engage with them. Almansoori (2021) highlights that reducing the complexity of credentialing platforms, providing clear instructions, and offering accessible technical support are essential for improving EE. Faculty members, for example, may hesitate to adopt online credentials if they perceive the system as overly complicated or time-consuming. Institutions can address this by offering hands-on training programs and workshops to build confidence and competence in using credentialing tools. Similarly, students benefit from systems that allow them to easily enroll in courses, track their progress, and access certifications, thereby enhancing their perception of ease of use.

**The third construct, SI,** refers to the degree to which individuals perceive that other, such as peers, colleagues, or authority figures, believe they should use a particular technology. In UAE higher education, social influence plays a significant role in shaping attitudes toward online credentials. For students, recommendations from peers, professors, or academic advisors can strongly influence their decision to engage with online credentialing systems. Faculty members may feel encouraged to adopt online credentials if institutional leaders or department heads emphasize their importance or if their colleagues are already using them successfully. Alblooshi and Hamid (2019) note that creating a culture of peer advocacy and leadership support is essential for leveraging social influence to drive adoption. For example, showcasing success stories of students who have used online credentials to secure internships or jobs can serve as a motivating factor for others to follow suit. Additionally, faculty who integrate online credentials into their courses and share their experiences can inspire their peers to adopt similar practices.

**The fourth construct, FC,** relates to the availability of organizational and technical resources that support the use of technology. This includes access to infrastructure, training programs, technical support, and institutional policies that enable effective adoption. In UAE higher education, facilitating conditions are particularly important because they address the practical barriers to using online credentials. Ahmed and Hassan (2021) emphasize that providing robust digital infrastructure, such as reliable platforms, high-speed internet, and integrated systems, is essential for ensuring successful implementation. For instance, LMS to simplify the user experience. Additionally, institutions should offer technical support services, such as help desks, online tutorials, and troubleshooting teams, to address any challenges users might face. Policies that incentivize adoption, such as awarding academic credits for completing credentialing programs or recognizing them as part of professional development, also strengthen facilitating conditions by aligning online credentials with broader academic and career pathways.

UTAUT emphasizes that these four constructs PE, EE, SI, and FC directly influence individuals' Behavioral Intention (BI) to adopt a technology, which in turn determines their Use Behavior (UB) or actual engagement with the system. For students and faculty in UAE higher education, behavioral intention to use online credentials depends on their perceptions of value, ease of use, and encouragement from peers and institutional leaders. For instance, when students perceive that online credentials enhance their career prospects (high PE), find the platform easy to use (high EE), and observe their peers actively using the system (high SI), they are more likely to develop a positive intention to adopt the technology. Similarly, faculty members who see evidence of the benefits of online credentials and receive institutional support are more likely to integrate them into their teaching practices. In practice, the UTAUT model provides actionable insights for promoting the adoption of online credentials in UAE universities. PE by emphasizing the career benefits of credentials through partnerships with industry and showcasing success stories of graduates who have secured jobs or advanced their careers through certifications. EE, universities should invest in user-friendly platforms, offer comprehensive training programs, and simplify administrative processes. SI involves creating a culture of advocacy, where faculty and students who successfully use online credentials act as role models for their peers. Finally, FC requires ensuring that infrastructure, support services, and policies are aligned to meet user needs.

Table 2 Summary of discussion study with methodology and finding

Study	Variables studied	Methodology	Key findings
Almanor (2021)	ICT proficiency, LMS usage	Quantitative analysis, UAE universities	Faculty and students with strong ICT skills benefit more from platforms like Blackboard.
Abbas & Khalid (2023)	Digital capabilities, collaboration, innovation	Mixed methods	Digital skills support collaborative learning and institutional innovation.
Alblooshi & Hamid (2019)	Student engagement, media literacy, e-learning tools	Case study, UAE higher education	Media literacy enhances academic integrity; tech comfort improves student engagement.

Ibrahim, Aldawsari, & Abboud (2023)	Data literacy, adaptive learning, ICT productivity	Quantitative survey	Data-driven learning improves outcomes; strong ICT use enhances administrative and teaching tasks.
Ahmed & Khan (2021)	Digital transformation, skill gaps	Surveys, document analysis	Skill gaps hinder innovation; strong digital skills are essential for transformation.
Abdellatif et al. (2023)	Digital identity, digital divide, wellbeing	Mixed methods	Gaps in tech access impact adoption; screen overuse affects wellbeing.
Ahmed & Hassan (2021)	Digital adoption, resistance to change, infrastructure	Surveys, regression analysis	Training reduces resistance; lack of infrastructure delays implementation.
Ashour (2020)	Institutional policy, innovation, digital wellbeing	Policy analysis, expert interviews	Institutional support is key; embedding digital wellbeing is critical.
Al-Mansoori & Abdulla (2023)	Collaboration tools, ICT strategy, infrastructure	Case study in UAE higher education	Strong infrastructure and strategic planning enhance digital collaboration.
Nikou, Reuver, and Kanafi (2022)	Information & digital literacy, tech adoption	Quantitative analysis	Digital literacy significantly influences technology adoption at workplaces.
Aavakare (2019)	Digital/information literacy, tech usage intention	Quantitative, UTAUT model	Literacy positively impacts intention to use digital tech in learning contexts.
Cavalheiro et al. (2020)	Digital literacy, digital tool usage	Survey with micro-entrepreneurs	Higher digital literacy increases usage of tech in creative industries.
Nikou & Aavakare (2021)	Literacy, digital tech in higher ed	Survey, HE context	Positive correlation between digital literacy and use of educational tech.
Jang et al. (2021)	Literacy, tech use for learning	Comparative study: Korea & Finland	Literacy influences digital tech use for learning in both countries.
Naqvi & Iqbal (2023)	ICT proficiency, teacher performance	Survey with distance teachers	ICT proficiency improves distance learning teaching effectiveness.
Paul & Roy (2023)	ICT awareness, proficiency, usage	Survey, postgraduate students	High ICT proficiency leads to better digital engagement among PG students.
Chen (2023)	Digital learning, soft skills	Mixed methods	Digital learning improves technical and soft skills development.
Hendrawati & Suherman (2025)	Digital content, Society 5.0 learning strategies	Literature review	Strategic content design is vital for future digital education.

Dangprasert (2023)	Digital skills, content development	Learning activity model design	Designed model improved student digital content creation and skills.
Alam et al. (2024)	Digital tools, communication, collaboration	Case study, student-run clinic	Tools enhanced interprofessional communication and satisfaction.
Mickel (2024)	Digital collaboration, positive communication	Conceptual analysis	Positive digital practices enhance collaboration outcomes.
Guerra et al. (2018)	Digital communication competencies	Literature-based framework	Defined indicators for productive digital communication in education.
Alajmi et al. (2025)	Digital capabilities, online credential adoption	Conceptual framework	Digital capabilities and self-efficacy crucial for credential adoption.
Velu (2022)	ICT, design thinking, innovation	Structural model	ICT mediates the effect of design thinking on innovation in HEIs.
Smolander & Yusof (2023)	ICT in early education	Experimental case study	Early exposure to ICT fosters digital talent development.
Marshall et al. (2018)	Digital identity, professionalism	Implementation of training activities	Activities enhanced student awareness of digital professionalism.

## METHODOLOGY

A systematic literature review was conducted following PRISMA guidelines. Databases including Scopus, Web of Science, PubMed, and Google Scholar were searched using keywords such as "UAE higher education", "digital capability", "online credentials", and "blockchain in education". Articles from 2020 to 2025 were included. A total of 40 studies were reviewed, with a focus on empirical research conducted within the UAE context. This systematic literature review (SLR) investigates the role of digital capabilities in UAE. A thematic synthesis was conducted to consolidate insights across qualitative and quantitative studies, facilitating the identification of trends, research gaps, and recurring patterns within the literature. This analytical approach ensured that the findings captured both the breadth and depth of the role digital capabilities.

## FINDINGS

Digital capabilities represent a set of essential competencies required to effectively navigate, utilize, and innovate with digital technologies within professional and educational environments. For educators, these capabilities extend beyond basic ICT skills and encompass a broad range of proficiencies, including the ability to evaluate digital tools, adapt to emerging technologies, collaborate in digital spaces, and critically assess information for pedagogical purposes. In the context of higher education, the development of digital capabilities is increasingly seen as vital for promoting innovation in teaching and learning, particularly as institutions integrate online platforms and credentialing systems into their academic offerings.

Online credential adoption, while gaining momentum globally, is often met with hesitation or concern among faculty members. These concerns may relate to the perceived complexity of digital systems, lack of clarity on institutional support, uncertainty about long-term value, or fears of increased workload (Al-Jarf, 2020). Educators' attitudes toward such technological shifts are influenced significantly by their level of digital capabilities. When faculty members possess strong digital skills, they are more likely to understand, accept, and actively engage with new digital initiatives (Alblooshi & Hamid, 2019).



Previous studies have emphasized that educators with higher digital capabilities are generally more confident and better prepared to implement technological changes in their teaching practices (Hendrawati & Suherman, 2025). This confidence mitigates resistance and fosters a proactive stance toward innovation. For example, educators proficient in digital content creation, data analysis, or virtual collaboration are more inclined to view online credentials as an opportunity to enhance learning and expand students' career prospects (Abbas & Khalid, 2023; Ali & Raza, 2024). Conversely, limited digital capability can exacerbate concerns, such as doubts about system reliability, the fear of failure in implementation, or the belief that online credentials may not align with traditional pedagogical models (Ashour, 2020).

The Concerns-Based Adoption Model (CBAM) suggests that educators' concerns evolve in stages—from unawareness and personal uncertainty to logistical concerns and, ultimately, impact-focused considerations. Digital capabilities influence these stages by equipping educators with the knowledge and confidence to navigate each phase of concern more effectively. For instance, a faculty member with well-developed digital skills is more likely to progress quickly from the "Self" or "Task" stages of concern to the "Impact" stage, where they evaluate the broader benefits of online credentialing (Ibrahim, Aldawsari, & Abboud, 2023; Ghaith & Ibrahim, 2023).

In the UAE context, where digital transformation in education is actively promoted as part of national development strategies, it is essential to understand how digital capabilities among faculty impact their willingness to adopt and engage with online credentials. Several local studies indicate a positive correlation between educators' digital readiness and their openness to educational innovation (Almansoori, 2021; Alneyadi, Abulibdeh, & Wardat, 2023).

These UAE-based findings are echoed in international contexts. Naqvi and Iqbal (2023), in a study on teachers in distance learning environments, found that ICT proficiency had a significant positive impact on work performance and instructional quality. Their research emphasizes that digital competence not only improves teaching effectiveness but also enhances task management, particularly in virtual settings. Similarly, Paul and Roy (2023) conducted a survey of postgraduate students and concluded that higher levels of ICT proficiency were directly linked to increased usage of educational technologies, academic satisfaction, and digital engagement. Their findings underscore the universality of ICT proficiency as a key driver of academic success and digital productivity, regardless of regional context. To overcome these challenges, higher education institutions must prioritize the development of robust digital learning frameworks. Ashour (2020) advocates for integrating digital learning strategies into institutional policies, ensuring that both faculty and students have access to the tools and training needed for success. Additionally, Abbas and Khalid (2023) recommend fostering a culture of lifelong learning, where continuous development of digital skills is embedded into the academic experience. By aligning digital learning initiatives with institutional goals and national priorities, UAE universities can enhance the quality and accessibility of education for all stakeholders. Globally, Alajmi, Jalil, and Ismail (2025) proposed a conceptual framework emphasizing the role of digital capabilities and self-efficacy in online credential adoption. Based on a literature synthesis, their model positioned digital identity as a core factor in students' motivation to pursue micro-credentials and participate in online academic ecosystems. This aligns with UAE initiatives to strengthen digital profiles for academic and career advancement.

## DISCUSSION

The discussion critically examines the findings, connects them to existing theories, and provides insights for future research and practical applications. The findings highlight the role of digital capability and online credential adoption within the UAE Higher Education Institutions. Digital capability, especially digital platforms, plays a dual role in promoting the UAE's internal cohesion and strengthening its global presence. While these findings underscore the efficacy of the UAE's digital capability, they also reveal gaps and potential areas for advancement, both theoretically and practically. The review highlights a complex interplay between policy, practice, and technology in shaping digital transformation in UAE HEIs. Institutions with well-defined digital strategies and investment in faculty training show higher adoption rates of online credentials. Nevertheless, disparities between public and private institutions, as well as between academic disciplines, suggest the need for more inclusive and scalable frameworks.

These implications highlight that **practitioners** are not just users of digital tools but critical enablers of systemic transformation. Empowering them with the right skills, autonomy, and institutional support is essential for the UAE's educational digitalization goals. The transition to digitally enhanced education and the growing use of online credentials place educators and academic staff at the core of institutional transformation. This review highlights both the challenges and opportunities faced by practitioners within UAE higher education institutions (HEIs) as they adapt to evolving technological and pedagogical demands. While most faculty members demonstrate baseline digital competence, the review finds that advanced digital pedagogy and integration of credentialing technologies remain unevenly developed. For practitioners, this gap signals the urgent need for targeted upskilling—not just in using digital tools, but in designing tech-enhanced learning experiences and embedding micro-credentials into academic programs. Moreover, the successful implementation of online credentialing systems is not merely a technical task—it requires a paradigm shift in teaching philosophy, where learning outcomes are granular, stackable, and verifiable in real time. Educators must therefore rethink traditional assessment strategies and explore new forms of learner recognition, such as digital badges, that align with labor market demands and lifelong learning models. Institutional culture also plays a vital role. In institutions where practitioners are actively involved in decision-making, the adoption of digital credentials tends to be smoother and more aligned with student needs. This underscores the importance of collaborative governance models that empower faculty as co-creators of digital innovation. Finally, the review emphasizes that student-centeredness should guide all practitioner-level efforts. Digital tools and credentials should not simply be added layers but must serve to enhance equity, access, and personalized learning pathways. This involves regularly evaluating the usability, accessibility, and impact of digital innovations from the learner's perspective.

From a practical perspective, the findings have important implications for **policymakers**, practitioners, and scholars in digital capability. For policymakers, There is a pressing need for a unified framework to assess and elevate digital skills across all UAE HEIs. Policymakers should standardize expectations for faculty and institutional digital readiness, drawing from models like the EU's DigCompEdu. Many institutions lack systematic professional development programs. Government bodies can provide funding, recognition, and policy mandates to ensure all educators receive training in digital pedagogy and credentialing technologies. To prevent fragmentation, ministries should enforce interoperability standards for online credentials, especially those using blockchain, ensuring nationwide acceptance and integration across platforms like Shahada and Musadaqa. Encourage collaborations between HEIs and technology providers to accelerate digital infrastructure development and pilot digital credential initiatives at scale. Public and private universities show varied adoption rates. Policies should foster equity by providing resources and support mechanisms for less digitally advanced institutions. Official recognition of micro-credentials and digital badges within national educational standards can validate lifelong learning pathways and enhance employability. Policymakers must establish robust mechanisms to assess the impact of digital initiatives on student outcomes, institutional performance, and graduate employability, enabling data-driven refinement of strategies.

There is a pressing need to establish unified national frameworks for digital transformation to guide and harmonize efforts across UAE Higher Education Institutions (HEIs). Continued investment in context-specific professional development for educators will be essential to ensure sustained progress. Additionally, enhancing the interoperability and security of credentialing platforms is likely to yield significant benefits. To address current limitations, future research should incorporate primary data collection—such as interviews or surveys with key stakeholders—and adopt longitudinal approaches to assess sustained impacts. Further studies could also explore the role of emerging technologies, including artificial intelligence and blockchain, in advancing digital capability. While UAE HEIs are making notable strides in digital capability development and online credential adoption, progress remains uneven and, in many cases, reactive rather than strategically proactive.

## CONCLUSION AND RECOMMENDATIONS

This study underscores the pivotal role of digital capability and online credential adoption within the UAE Higher Education Institutions. This theoretical model connects digital capability and online credential adoption within the UAE higher education institutions through individuals' digital literacy to study the relationship among those variables which is essential for faculty readiness to adopt online credentials. The integration of digital capabilities and online credential adoption in UAE higher education is progressing, marked by innovative

initiatives like blockchain-based credentialing platforms. However, to fully realize the potential of these advancements, institutions must address challenges related to strategic planning, faculty development, and infrastructural support. A concerted effort in these areas will ensure that UAE HEIs remain at the forefront of digital education innovation.

Addressing challenges related to strategic planning, faculty development, and infrastructural support is essential to ensure that UAE Higher Education Institutions (HEIs) remain at the forefront of digital education innovation. Targeted efforts in these areas will strengthen institutional readiness and sustain competitive advantage in a rapidly evolving educational landscape. While this study advances the discourse on the role of digital capability and online credential adoption within UAE HEIs, it is not without limitations. The reliance on secondary data and case-based analysis may constrain the generalizability of its findings across different institutional contexts and educational environments.

While this study contributes to advancing the discourse on role of digital capability and online credential adoption within the UAE Higher Education Institutions, it is not without limitations. The reliance on secondary data and case-based analysis may restrict the generalizability of findings across different landscapes. Future research could address these limitations by incorporating primary data collection, such as interviews or surveys with key stakeholders, and exploring the longitudinal impacts of digital capability and online credential adoption. Moreover, further studies could examine the role of emerging technologies, such as artificial intelligence and blockchain, in enhancing digital capability.

UAE HEIs are making notable strides in digital capability development and online credential adoption, yet the process is uneven and often reactive. Recommendations include:

1. Establishing unified national frameworks for digital transformation.
2. Investing in continuous, context-specific professional development for educators.
3. Enhancing interoperability and security of credentialing platforms.
4. Conducting longitudinal studies to assess impact on learning outcomes.

## ACKNOWLEDGEMENT

The authors would like to thank Universiti Tun Hussein Onn Malaysia (UTHM) for their direct and indirect contributions.

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