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Year: 2026

Version: Accepted manuscript

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Please cite the original version:

Yasin, N., Fatima, T., Samhour, D., Zahoor, N., Al Qahtani, M., Alhaddashi, S. A., & Tariq, A. (2026). Exploring how the Metaverse Facilitates the Development of Entrepreneurial and Cross-Cultural Competencies in UAE Higher Education. In A. Nazarian & P. Foroudi (Eds.), *Mastering Cross-Cultural Management: Navigating the Global Workplace* (pp. 248 – 265). Routledge. <https://doi.org/10.4324/9781003620921-20>

Current Word Count: 9546

**EXPLORING HOW THE METAVERSE FACILITATES THE DEVELOPMENT OF ENTREPRENEURIAL AND
CROSS-CULTURAL COMPETENCIES IN UAE HIGHER EDUCATION**

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Abstract

This chapter discusses the importance of the metaverse in developing cross-cultural and entrepreneurial capabilities within institutions of higher learning (HEIs) in the United Arab Emirates (UAE). It examines the theoretical, pedagogical, and cross-cultural roles of the metaverse in human capital development and its alignment with the UAE's national innovation policies, including the UAE Vision 2031 and the Dubai Metaverse Strategy. Additional topics in the chapter can be seen in experiential learning, cultural theories (Hofstede, GLOBE, Cultural Intelligence, and digital pedagogy (immersive learning). It describes how immersive learning platforms can combine to facilitate cross-cultural interaction, leadership, and entrepreneurial skills, training students to work in hybrid jobs and digitally mediated leadership positions. The chapter concludes with the challenges and opportunities of applying the metaverse, such as access issues, data ethics, cultural inclusion, and faculty engagement. It provides a case study of the EduVerse to demonstrate how immersive learning can be effectively integrated to develop entrepreneurial and cross-cultural management skills within HEIs. The chapter does not focus on the metaverse as a technological resource but as a pedagogical praxis that creates a gap between theory and embodied practice in education, both of which are future-ready.

Keywords: Metaverse, immersive learning, entrepreneurial competencies, cross-cultural competencies, higher educational institutions, digital pedagogy.

Introduction

The metaverse is here, and it's transforming how we see the world but how we participate in it — from the factory floor to the meeting room." Satya Nadella, CEO of Microsoft. The digital age of cross-cultural management involves understanding the intricacies of different cultural interpretations and using technology to enhance communication, cooperation, and decision-making in global teams. To begin with, the metaverse is altering the patterns of communication of people as well as their cultural and organisational engagement. Moving to active co-creation in mutual virtual places instead of a passive exchange. Cross-cultural management may be helpful in providing inclusiveness and innovation. It brings together different perspectives and methods, which eventually results in better organisational performance in a world that is becoming more interconnected. As organisations become more internationally based, leaders need to become culturally intelligent and flexible to bridge differences and enable team members to interact with others from diverse backgrounds. This involves the need to be culturally sensitive and to introduce measures that foster respect and understanding among one another. Therefore, all voices should be sensitised and appreciated in the decision-making process. Second, cultural intelligence is developed both in face-to-face interactions and in immersive virtual environments, where mediated cues are used instead of physical presence. Third, the UAE provides a unique context for such change due to its multicultural society and innovative approach, including the Dubai Metaverse Strategy and UAE Vision 2031, which position immersive learning as a pillar of future-ready employee development.

The emergence of the metaverse as a business and educational service changes the way of collaboration and communication of teams by providing immersion environments that do not depend on geographical limitations. The online rooms facilitate innovative forms of communication and new forms of solving problems and introduce a feeling of presence and engagement that is not necessarily applied in conventional systems of communication. Fourth, the method of immersive learning can be discussed as the bridge between theoretical and practical knowledge to prepare them with collaboration in a hybrid

form. Fifth, the virtual worlds are used as cognitive reconstructs. These spaces will allow learners to train negotiation, leadership, entrepreneurship, and cross-cultural decision-making. Technical skills and the awareness of how cultural norms are represented through avatars, protocols of interaction, and platform affordances can lead to the development of these competencies, which in turn can lead to effective teamwork and collaborative work in any setting (Guillen-Yparrea et al., 2023; Damaševicius et al., 2024). Sixth, virtual entrepreneurship is intercultural by definition since the formation of values takes place in digitally mediated groups that are composed of multiple cultures. Seventh, the chapter elaborates a thesis that the concept of a metaverse in learning is not just a technological tool but a praxis, which promotes transferable leadership, collaboration, and workforce preparedness skills in real-life contexts.

The chapter examines the nexus between an emerging metaverse and the opportunities of cross-cultural management capabilities in the context of the higher education sector of the United Arab Emirates (UAE). It places immersive learning as a transformative pedagogical practice that allows immersing students in simulated multicultural settings, building more profound intercultural sensibility, empathy, and flexibility. The discussion starts with the strategic usefulness of the metaverse in improving cross-cultural management education, focusing on the theme of how virtual worlds can eliminate cross cultural gaps and promote collaboration in problem solving in an international environment. This chapter then connects these innovations to entrepreneurial competencies as metaverse-based learning builds confidence, opportunity recognition, and resilience which are some of the characteristics of entrepreneurial thinking. The chapter builds on the modernist pedagogical premises in its analysis of constructivist, experiential, and transformative learning theories that inform designing and facilitating metaverse-enabled education. Lastly, it makes critical reflection on the obstacles and trends that are defining the integration of metaverse in higher education, including technological preparedness, inclusiveness, ethics, and the changing demands of students and instructors. The chapter presents a solid insight into the potential of immersive technologies to transform education in cross-cultural management and the development of entrepreneurial competencies into the higher education sector of the UAE through this synthesis.

The chapter explains the application of the metaverse to learning and pedagogical processes in higher education institutions. It seeks to prepare the students to be competent in cross-cultural and entrepreneurial skills to be able to cope with skill gaps in the future. It also aims to relate experience learning, cultural theories, and digital pedagogy to the real-world educational strategies. This chapter highlights the importance of cross-cultural interaction, leadership, and entrepreneurial skills that can be developed through immersive learning platforms. It also highlights the threats and opportunities that institutions of higher learning in the UAE will face in their quest to produce a future workforce aligned with the nation's objective to satisfy cross-cultural and entrepreneurial aspirations of digitalisation. Furthermore, this chapter also gives a practical learning case illustrating a real example.

1. Cross-Cultural Management and Immersive Learning in the UAE Context

Technologies, such as the metaverse, have revolutionised the fields of education and organisation and now require novel methods to empower the workforce in the future. One of the most disruptive changes

in this field is the emergence of immersive virtual worlds, which are also known as the metaverse. In the context of this chapter, the metaverse is a system of potential 3D spaces that are real-time and sustainable, enabled by technologies such as virtual reality (VR), augmented reality (AR), blockchain, and artificial intelligence (AI). It is influencing the way individuals learn, work and interact all around the world. Compared to previous versions of e-learning, the metaverse brings the aspects of presence, embodiment, and simulated co-location, which enable learners to communicate in environments that reflect the dynamics of the physical world. It is in this new digital paradigm that higher education systems are evaluating the metaverse as an educational platform for facilitating large-scale experiential, constructivist, and intercultural learning. Cultural diversity can be used as an asset to learning, as it exposes students to a larger portion of the possible job market. However, it also demands more deliberate forms of cross-cultural mediation, cultural intelligence building, and inclusive design.

This chapter analyses the benefits of metaverse-based education for online and offline preparation of students to engage in the real world, particularly in entrepreneurship education and cross-cultural management. The digital transformation, the ecosystem of innovations, and the development of human capital are the focus of the national strategies of the UAE, including the Dubai Metaverse Strategy and UAE Vision 2031. The concept of cross-cultural management, which used to focus on the multicultural dynamics in person, now needs to shift to consider virtual interaction, avatars, and online-only teamwork. Simultaneously, education in entrepreneurship has moved away from classroom theory to more simulative, interactive, and problem-driven practice, reflecting the risks and complexities of real-world innovation. Here, metaverse education is created as an intersection point, providing an intercultural and immersive environment to develop applied expertise and international leadership. It achieves this by blurring the distinction between learning and doing, allowing students to practice entrepreneurial behaviour, cross-cultural negotiation and cross-cultural leadership in safe, yet realistic, settings.

2. Theoretical Foundations

Education facilitated by the metaverse involves integrating pedagogical theory, technological competence, and socio-cultural knowledge to design experiential and culturally situated learning environments. This section is based on three related theories: cross-cultural management theory, experiential learning theory, and immersive learning theory. It articulates what the metaverse facilitates pedagogically, how, and why these spaces help to develop transferable entrepreneurial and intercultural abilities. These models form the basis of conceptualising the metaverse as a pedagogical praxis in which knowledge learning, behavioural practice, and cultural acclimatisation take place concurrently.

2.1 Cross-Cultural Management Theory in Digital Contexts

The Hofstede Cultural Dimensions model (Hofstede, Hofstede, and Minkov, 2010), the Seven Dimensions model (Trompenaars and Hampden-Turner, 2011) and the GLOBE Study (House, 2004) are all traditional models that have long influenced how we view cultural differences in communication, leadership, and organisational behaviour. Yet, with the education and work environments becoming more digital, these theories require redefinition. The hierarchies are altered, visuals become less important, and communication is done using avatars and platform-specific norms. The idea of Cultural Intelligence (CQ) is essential because digital spaces are becoming more culturally diverse. As Earley and Ang (2003) posit, being a means of working or studying in various cultural contexts, CQ is even more crucial in digital environments. In the metaverse, this means reading between the lines, managing relationships that aren't in real time, and building trust without meeting in person.

This applies especially to the UAE, where people work and study in multicultural classrooms (Yasin, 2022). Yasin and Khansari (2021) say that the entrepreneurial characteristics of students differ greatly based on gender and cultural factors, and a common teaching approach may not offer a fair outcome. They found that learning environments must be culturally responsive and they should incorporate the different worldviews and styles of interaction among learners. According to Yasin, Khansari, and Tirmizi (2021), these barriers are common among incubators in the UAE, whereby differences in expectations and communication styles restrain the potential of what would otherwise be promising ventures. This indicates that the paradigm of cross-cultural management has shifted from models of awareness to adaptive, participatory, and digitally eloquent models of interaction, capable of running both physically and virtually.

2.2 Entrepreneurship and Experiential Learning Theory

The concept of entrepreneurship education is based on the idea that knowledge is best advanced when used in practice (Fatima et al., 2024). In cross-cultural entrepreneurial systems, it is critical to the creation of opportunity recognition, calculated risk-taking, and creative use of resources (Yasin and Hafeez, 2023; Fatima et al., 2025). The experiential learning model offered by Kolb (1984) is a powerful theoretical framework that focuses on concrete experience, reflection, conceptualisation and experimentation as a form of learning. The metaverse is the best environment to play this cycle due to its ability to set up immersive and interactive settings where the learner can flow between reflections and action seamlessly in a simulated environment.

This is supported by evidence in the UAE. Simulation and guided reflections in experiential entrepreneurship programmes have been found to substantially improve the enterprising behaviours of students (Yasin and Khansari, 2021), and tools based on gamification and simulations have been found to instill entrepreneurial thinking and adaptability in decisions, especially in culturally diverse settings (Yasin et al., 2022). Nevertheless, it requires the alignment of immersive instructional strategies to the cultural and contextual realities of learners (Yasin and Gilani, 2022). Immersive technologies increase entrepreneurial self-efficacy and opportunity perception when combined with the existing models, including the Entrepreneurial Event Model and the Technology Acceptance Model (Davis, 1989; Radianti et al., 2020; Shepherd et al., 2021). In line with the theory of effectuation, the metaverse would be a cognitive rehearsal field where learners can train their decision-making capacity and deal with uncertainty under the guidance of trying and adaptation, making technology an amplifier of entrepreneurial ability instead of a didactic supplementary aid (Sarasvathy, 2001; Yasin et al., 2023).

2.3 Immersive Learning Theory and Digital Pedagogy

Constructivist theory of learning defines immersive learning as learning where knowledge is created through environmental and social interactions with the environment and fellow learners (Vygotsky, 1978). Training environments allow people to work actively, collaborate, and interact with online objects instead of passively consuming materials (Fatima et al., 2024). Studies indicate that learning in the metaverse can help to improve motivation, engagement, and performance and enable learners to perceive failure as a learning process (De Felice et al., 2023). Immersive tools can also decrease the load of cognitions by enhancing visualisation of a system and memory (Al-Muqbil, 2024). The empirical support of UAE business education literature shows an increase in participation, creativity, self-confidence, and soft skills like resilience and adaptability in the case of immersive learning combined with guided reflection and feedback (Yasin et al., 2022; Yasin and Gilani, 2022).

3. Expanded Applications of Metaverse-Based Learning: UAE and Global Perspectives

Based on the theoretical understandings provided above, this section discusses the operationalisation of metaverse platforms in higher education, particularly in UAE-based efforts. Through these projects, the value of immersive environments is demonstrated in improving entrepreneurial skills, cross-cultural competence, and preparation to work in hybrids.

As reported by Yasin and Khansari (2021) and Yasin et al. (2022, 2023), the role of immersive simulations in UAE institutions in a more applied and inclusive model of learning has been widely documented. In their study, they emphasise the role of culturally responsive design, feedback-intensive environments, and collaborative tools reflective of the realities of local and global workplaces.

3.1 Entrepreneurial Competence Through Immersive Simulation

Entrepreneurship education is most useful in case learners practice in an uncertain, iterative, and problem-solving context. The metaverse provides an interactive environment where students will be able to test products, pitch an idea, and get real-time market feedback (Anwar et al., 2023). The opportunity can be observed in Sorbonne University Abu Dhabi, where INSEAD XR allows students to handle simulated crises and virtual boardroom meetings in real time and receive immediate feedback. Likewise, the Dubai Future Accelerators initiative uses VR in the early-stage venture design with industry mentorship. Immersive simulations encourage creative thinking and decision-making globally (Radianti et al., 2020). Further evidence supporting gamification and simulation by UAE professionals indicates that learning by trial and error through gamification and simulation is engaging, critical, and safe (Yasin et al., 2023; Yasin and Gilani, 2022).

3.2 Enhancing Cross-Cultural Competence

The metaverse allows students with different backgrounds to work on common assignments in simulated workplace settings. The Higher Colleges of Technology (HCT) has created Eduverse, a virtual campus in collaboration with HoloFair, that aids more than 20000 students in teamwork (service through multicultural teams), business plan co-design and virtual mentoring. The experiences enhance the skill of communicating, cultural sensitivity and digital collaboration. These settings encourage transnational collaborative fluency, which enables learners to work efficiently on either side of cultural and digital borders (Yasin et al., 2023), which is consistent with the idea of meta-cognitive cultural intelligence where interpretation and adaptation to cultural indicators must be real-time (Fatima et al., 2025).

Culturally responsive pedagogy is especially essential in the context of the UAE, which is highly diverse because immersive platforms promote thinking about cultural assumptions instead of hindering diversity (Yasin and Khansari, 2021). Immersive learning also leads to learning outcomes and intercultural competence. The UAE industrial experience demonstrates that augmented and immersive training enhances engagement and learning memory significantly, particularly in cases of compatibility with the digital capacity of the learners (Shwedeh et al., 2024), and prepares students to work in a more globalised world.

3.4 Comparative Global Initiatives

Countries around the world are investing in immersive education, but few have achieved the scale and integration that the UAE has. KAIST in South Korea has built a virtual campus in Kenya to increase access

to academic programs worldwide. Tsinghua University in China is developing digital twins to be part of its campuses, serving to train engineers and entrepreneurs. In collaboration with EON Reality, Ethiopia has introduced a Knowledge Metaverse platform, costing US\$19.9 million, to support students in universities and upcoming entrepreneurs (Canales, 2025). Such developments reflect a new international trend to immersive, transnational higher education.

These global programs provide viable benchmarks. On the one hand, they are in the initial phases, but they indicate an increasing awareness that immersive learning can be used in education to fill existing knowledge gaps and speed up the acquisition of skills. According to Yasin et al. (2023), immersive learning ecosystems that are formed based on policy and institutional alliances could facilitate human capital formation and innovation. Although the cases of the world encourage experimentation, the UAE model exemplifies systemic and comprehensive delivery by integrating pedagogy, infrastructure, and policy into a national workforce innovation agenda.

4. Real-World Skill Development: Hybrid Work, Digital Leadership, and Inclusion

Students are supposed to be ready to perform in this hybrid reality because digital and physical processes in workplaces are becoming more and more mixed. The metaverse-based learning can train these practical skills. The metaverse is a technical platform, as well as offers learners to simulate and practice how individuals work today, including passing through time zones, conducting online meetings, and working with remote teams. The difference between the theoretical training and work in the field is more pronounced in the aspects where the digital presence, remote work, and intercultural communication must occur.

Schools in the UAE started to include such skills in their programs. According to Yasin and Gilani, the simulative process is an immersive one in which the learners are trained to adopt professional habits before joining the workforce (Yasin and Gilani, 2022). Digital leadership is another area that is getting attention. Yasin et al. (2023) argue that the required soft skills of empathy, adaptability, and resilience are attained when students are placed in active roles, e.g. leading virtual projects or managing a team in a simulation. These competencies are not acquired by traditional means of instruction and they are getting more demanded in workplaces that are dynamic.

Inclusion is also a contributing benefit. The design of platforms should be well thought through to enable students with different abilities and backgrounds interact more on an equal level. Virtual worlds with avatars in which all can be personalised and languages could be changed can be used as an example to get people more engaged. Yasin and Khansari (2021) underline the importance of the inclusive learning environment where students can learn based on their experiences and identities. Such trends indicate that metaverse-based learning is not merely academic: it equips students with interpersonal skills, professional skills and ethical skills to work in the hybrid and globally dispersed world environment, which fits the overall goal of the UAE to create future-ready graduates.

4.1 Hybrid Work and Collaboration Skills via Virtual Platforms

RIT Dubai and Higher Colleges of Technology are the institutions that are actively following the implementation of metaverse-based learning in order to offer students practice in remote and hybrid teamwork. Such programs tend to entail industry mentorship and cross-border student engagement, which allow students to practice cross-cultural and time zone communications. Immersive learning

enables students to be comfortable working with ambiguity, practising real-world decision-making, as well as developing confidence, flexibility in communication, and technical competence-now handled as the essential skills needed to work without ambiguity in digitally mediated work environments (Yasin et al., 2022). These virtual practices enhance learners to distributed and technology based professional environments.

The extensive progress of entrepreneurial learning in the UAE is an additional reason to appreciate the power of immersion technologies. UAE University just conducted a pilot study that showed a reduction in procedural errors and a shorter time to skill acquisition when a mixed-method pilot (protagonist) used XR simulation to supplement traditional vocational training in comparison with conventional approaches (Shwedeh et al., 2024). Together with the prevalence of AI and blockchain in UAE start-ups, the number of immersive programmes has grown tremendously, proving that the technologies serve a direct impact of creating quantifiable benefits in the workforce readiness, entrepreneurial agility, and organisational preparedness to operate in the hybrid work environment.

4.2 Leadership Development in Immersive Contexts

With organisations moving to remote and hybrid forms, leadership development needs to evolve. Immersive applications provide students with training in realistic environments to assume leadership positions, practice decision-making under uncertainty, manage conflict, and work with cross-cultural and cross-time zone teams. Virbela and Talespin are tools that provide learners with the opportunity to practice leadership strategies in business-like environments that mimic the social dynamics of distributed workplaces, as opposed to traditional classroom settings. According to Yasin and Gilani (2022), these platforms are characterised as the medium through which learners can experiment with leadership strategies and hone them through trial and error.

These settings also indicate the diversity of the current teams, in which leadership is more about cultural sensitivity than technical coordination. Students are often responsible for groups composed of individuals from various backgrounds, which helps them develop empathy and cultural awareness. According to Yasin and Khansari (2021), students should be trained on how to go through such diversity with respect and understanding. Situation simulations use immersive tools to help learners develop the skills needed to lead inclusively and ethically, solidifying leadership as a relational and culturally situated process rather than a task-based one.

5. Challenges and Opportunities in Metaverse-Based Higher Education

Although there is an opportunity, the current state of metaverse-based education is that it has a number of practical, ethical, and pedagogical challenges to overcome, which must be addressed to be implemented in any meaningful way. Despite the immense potential of immersive platforms to enhance the level of engagement and skills growth, its implementation in higher education is disproportionately unsatisfactory and complicated. One of the impediments is access. This issue does not feature so much in other countries like the UAE where national strategies have been emphasised when deploying 5G and investing in technological education. However, the existing international cooperation can still be hindered by the differences in the cross-border infrastructure (Yasin et al., 2023; World Bank, 2024).

Another ethical issue is the immersive environments are full of data. Such platforms are likely to store behavioural and biometric personalities, threatening the aspects of privacy, informed consent, and digital surveillance. The growing necessity of data protection and transparency is especially important in cases when institutes adopt AI-based tools in the metaworld environment of the learning process (Munawar, 2025). The absence of explicit governance frameworks may put the credibility of the students at risk and retard the institutional adoption.

Cultural sensitivity and inclusion are other areas of concern. Yasin and Khansari (2021) found that students are more likely to learn when there is reflected identity and values in learning settings. Students may feel marginalised or out of place when a local culture is not reflected in the avatar creation, norms, or content on the platform, suggesting that inclusivity should be integrated into the design.

Employee preparedness is the other significant barrier. According to Yasin and Gilani (2022), the most sophisticated immersive tools will not deliver any meaningful results unless the teachers receive proper training on how to use them. Without continued professional growth and instructional support, faculty are likely to revert to superficial applications of those technologies instead of using them actively to learn and think critically.

These obstacles, however, are also opportunities. Immersive education can be an exceptionally efficient equaliser when properly invested in, designed, and aligned to the curriculum. It extends accessibility, caters to a wide range of learners, and removes the distance between classroom learning and employment.

5.1 Access and the Digital Divide

Inequality in the accessibility of devices, internet infrastructure and funding is still a challenge to immersive learning. The World Bank (2024) indicates that, in particular, low-income regions also have internet access of less than 30%. The cost of equipment is also a barrier in underserved communities because it is high.

Although the UAE has made progress through national 5G deployments and partners with the private sector, global metaverse partnerships, unless tailored to include partners with limited means, will exclude them. Yasin and Gilani (2022) propose including accessibility in the design of instructions by ensuring that the learning tools represent the real-life conditions of the students. To accomplish this, suggested interventions are to create low-bandwidth or mobile-friendly versions of immersive tools as well as to introduce bring-your-own-device (BYOD) with on-campus support, which will enable institutions to grow access without high reliance on hardware.

5.2 Ethical, Cultural, and Legal Considerations

The application of immersive technologies in higher education presents a multifaceted environment of ethical, cultural, and legal limitations that extend beyond the conventional learning setting. With student activities on metaverse platforms, they produce highly sensitive information, such as biometric data, behavioural data, and interaction histories. This poses imminent issues regarding the privacy of the data, informed consent and possible abuse of information to conduct surveillance or commercial activities. Although laws like the General Data Protection Regulation (GDPR) of the EU and the Federal Data Protection Law No. 45 of 2021 of the UAE provide some basic safeguards, they were not designed specifically for immersive, permanent, and AI-enhanced systems. More recent policies specifically

targeted at mitigating the risks of extended reality (XR) environments are necessary, as Prillard, Boletsis, and Tokas (2024) propose to make immersive learning ecosystems responsible, transparent, and respectful of rights.

Besides privacy, cultural and identity factors are also crucial, particularly in a diverse society such as the UAE. According to Yasin and Khansari (2021), inclusive and culturally responsive environments are based on such characteristics as personalisation of avatars, gender-sensitive settings, and multilingual support. The absence of such planned features will leave underrepresented or culturally different students feeling unwelcome or not represented. These are not add-ons; they must be integral to platform architecture and curriculum planning and need to be integrated from the start.

Another complex aspect of ethics is the economic and entrepreneurial actions that occur in immersive education. As virtual organizations, online goods, and remote freelance relationships begin to gain prominence, the concerns of intellectual property, just compensation, and algorithms biases begin to have a greater role. Using virtual environments as an example, implicitly, they can strengthen disparities by training it on biased data, or ignoring cultural distinctions in communication behavior patterns and decision-making. DeNardis and Raymond (2013) are of the view that such risks in digital labour ecosystems need to be addressed through governance structures.

In order to afford the shifting environment, moral online literacy is the most valuable aspect of entrepreneurship education that universities and colleges ought to stress. The training that students should be exposed to to succeed in the metaverse, according to (Yasin et al., 2023), includes technical and business capabilities and critical knowledge of the ethical, legal, and cultural implications of immersive digital working and leading. These principles can be actively integrated into policy and practice, which allows universities to implement immersive education to promote innovation as well as consider the concepts of equity, transparency, and respect in a rapidly changing digital world.

Pedagogical Limitations and Staff Readiness

Immersive technologies have tremendous potential in instruction and learning, but platforms are not the sole determining factor of success in the field of higher education pedagogy. One of the most significant threats is the propensity to adopt the metaverse as an object of novelty or a demonstration instead of connecting its usage to significant learning outcomes. Yasin and Gilani (2022) caution that simulations and XR experiences would need to be incorporated in model learning, hence supporting the abilities to reflect, apply, and evaluate. According to their research, in the case of the teacher who gets involved in working with metaverse tools without a clear instruction plan, the students will be able to conduct themselves with the environment, yet fail to learn profoundly and apply learning to their real-life work. This underlines the imperative of purposeful, performance-oriented design in which immersive experience is associated with real-life skills.

Another barrier is the inability of the faculty to be conversant with immersive learning technologies and digital pedagogy. This gap in skills will make uptake not possible and can lead to poor or inefficient use of metaverse tools. The professional development must not be limited to the technical training but may include pedagogical frameworks, co-creation methods, and encouragement to proceed with experimentation as suggested by Radianti et al. (2020) and Mystakidis and Lympouridis (2024). The institutions of learning must invest by training the faculty extensively in immersive instructional design and learning science. Collaborative curriculum planning structure, in which instructional designers and

technologists take part with incentives and resources to pilot immersive projects and assess their effectiveness.

Relevance and engagement can also be achieved through involving students in co-design. The experiences gained when learners are included in the development process are more likely to address their needs, expectations, and cultural backgrounds, a crucial consideration when working in a multicultural environment such as the UAE. Yasin and Gilani (2022) highlight the importance of immersive education's ability to facilitate iterative and feedback-intensive learning. The schools that implement these ideas within the culture of teaching will be better positioned to achieve the full potential of the metaverse in education. After all, making a promise of immersive education is impossible without a similar investment in faculty capacity. When well-trained and in partnership with the institutions, teachers can make the metaverse an innovative technological resource that revolutionises pedagogic practice.

5.3 Scalable Implementation Strategies for Resource-Limited Institutions

The UAE-wide institutions can contribute to the national innovation objectives by implementing a staged, context-based approach to integrating new technologies and immersive platforms, based on capacity and institutional mission. The essence of the strategy is to harmonise the institution's work with the strategic national plans, including the UAE Vision 2031, the Artificial Intelligence Strategy 2031, and the Dubai Metaverse Strategy. Pedagogical goals, such as teaching and learning objectives that the institution seeks to achieve, can be considered by UAE institutions, especially those with limited resources, in making careful, strategic decisions. This will prevent the over-extension of budgets or the overworking of personnel. Ensuring that the selected technologies become part of the UAE's larger national development priorities, such as Vision 2031 or the Metaverse Strategy, will help institutional innovation address country-wide concerns and be more likely to be aligned or funded.

First, institutions can undertake an internal review that charts institutional priorities, resource limitations, and digital upgrade opportunities. This is the foundation of informed and circumstantial decisions. Engagement of the stakeholders who will include faculty, students and administration leaders will make adopted technologies to respond to visible needs and not affected by the pigments of external influences. UAE has national initiatives of low-cost and scalable computer media that fits the role rather well. The first steps should be pilot modules and immersive technologies such as virtual reality or AI-based learning analytics can be used to complement the teaching and learning process. There must be an investment in faculty training so that they can be accommodated to the technology. The UAE can leverage several localised avenues to scale and develop digital pedagogical capacity to provide such innovations effectively.

The organisations can also expand their capabilities by liaising with the government, innovation centres, and edtech firms to implement low cost high impact learning models. Constant monitoring and gradual scaling based on set metrics of success will guarantee successful change and success in the long term. The overall goal of the UAE in this business strategy is the encouragement of an inclusive, digitally enhanced education that is sustainable even in small environments.

5.5 Perceptions and Realities: Student and Educator Views on Metaverse-Based Learning

The UAE has begun to measure the perception of teachers and learners concerning the effectiveness of the immersive learning environment. The outcomes of a study that was conducted among 232 university

students and 62 educators were introduced by Abukhalaf, Charles, and Hill (2024) in mixed-method research. It revealed that teachers were more likely to be prepared with a knowledge of the metaverse and believed that the metaverse would have a beneficial effect on pedagogies. Nevertheless, student responses were more towards a negative direction (Abukhalaf, Charles and Hill, 2024). The educators in this study have highlighted the capability of the metaverse to form inter-active and dynamic learning experiences, where the four-walled conventional classes are not dictative (Abukhalaf, Charles and Hill, 2024). According to a survey of 337 UAE undergraduates, the metaverse technology was a welcome inclusion in their studies, and they felt more motivated to engage with the technology and felt better about their learning (Yousef, Al Malak and Bayoumy, 2025). These results resonate with the international backlash, suggesting that an appropriately developed immersive environment can enhance student engagement and help them to make abstract concepts palpable, especially in science and technical subjects.

In the focus groups conducted by Abukhalaf et al., (2024) a significant number of students stated that they feared that completely online classes may lead to an increase in social isolation and a decrease in the real-life ability to interact with people, which were influenced by the negative experience of remote education during the COVID era (Yousef, Al Malak and Bayoumy, 2025). In addition to the pain mentioned as a consequence of the unlimited use of headsets, which may lead to eye strain or headache, some students express disbelief in the use of immersive tech (Yousef, Al Malak and Bayoumy, 2025). Concerns about data security and privacy also led to the negative feedback, especially because a lot of data is obtained in immersive platforms.

Researchers hold that such criticisms can be resolved by means of calculated and careful corrections. As an example, professional development and support can help teachers to make their use of VR meaningful and not just a repetition of the previous experience even in an online form. Further, it depends on the policy and institutional infrastructure, be it equal access to devices or creating patterns that will ensure ethical and inclusive use of the metaverse in the classroom (Yousef, Al Malak and Bayoumy, 2025). The UAE educational institution can minimize the concerns at hand, and realize the full immersion of the metaverse in teaching and learning approach by initiating the process of closing the knowledge gap and removing the logistical difficulties.

Conclusion: Towards a Praxis of Future-Ready Education

The use of immersive technology in higher education especially in entrepreneurship and cross-cultural management is a major pedagogical transformation. This chapter illustrates that the metaverse has the power to become transformative in relation to national strategies, institutional capacity and the culturally responsive pedagogy. In the UAE where policy priorities are innovation, economic diversification, and Emiratisation, immersive learning can be used to build digitally fluent and globally competent Emiratis. The experience of economy programs like Eduverse, the Knowledge Metaverse, international projects has shown that metaverse-based education is not only a technological enrichment of the process but a systemic provision of the connection between theory and practice. Such spaces serve as cognitive rehearsal zones that develop entrepreneurial mentality, collaborative fluency and leadership in uncertain multimedia, digitally mediated directions.

However, the prospect of immersive learning cannot be fulfilled without addressing such challenges. The problem of access, ethics, and faculty preparation should be addressed with definite

policies, investments in professional development, and inclusive designs. In mapping the future, teachers, policymakers and institutions should come up with learning spaces that not only equip students with the technologies of tomorrow but also with the challenges of ethical and effective operation in pluralistic, digitally mediated spaces. As it is based on reflective pedagogy and applied through equitable design, metaverse-based education, which emphasises collaboration, can change how we teach, learn, and lead in the 21st century.

6. Case study of EduVerse: Immersive Learning and Entrepreneurial Competence in a UAE-Based University

In 2023, a major UAE-based university launched an ambitious immersive learning platform called EduVerse, developed in collaboration with the regional extended-reality company. The initiative was one of the first large-scale educational metaverse deployments in the Gulf region, designed to align with UAE Vision 2031 and the Dubai Metaverse Strategy, both of which emphasise digital innovation, experiential learning, and the development of human capital for a knowledge-based economy (Yasin and Poulin, 2025). The university's leadership envisioned EduVerse as a virtual campus that could merge learning, student engagement, and entrepreneurship in one integrated ecosystem. The project aimed to bridge the gap between classroom theory and applied practice by enabling students to experience entrepreneurship, leadership, and cross-cultural teamwork inside a simulated, interactive 3D environment (cf Yasin and Hafeez, 2018).

The EduVerse Concept

EduVerse was designed as a virtual UAE cultural and architectural campus, with a 50,000 m² size. It contains various opportunities where students can move around in the forms of avatars: they may attend lectures, visit virtual offices, present start-up ideas, attend employability fairs. The university was built as a culturally adaptive place: the avatars were available to wear traditional Emirati clothes, Arabic and English interfaces interacted, and the main UAE landmarks Al Ain Oasis, Khorfakkan Amphitheatre, and Expo City Dubai were recreated digitally, which produced a feeling of national belonging (HoloFair Portfolio, 2024).

EduVerse environment became a seamless component of the learning management system and single sign-on portal used at the university. Students were not required to switch platforms and facilities to engage in extracurricular activities instead of formal coursework. Career Centre was the most popular one where students scheduled virtual meetings with advisors or participated in group sessions on employability and innovation.

The university administration referred to the platform as living laboratory in which the students will learn through experience, as appropriate in the model of experiential learning propounded by Kolb. The immersive environment was anticipated to enhance the entrepreneurial ability, possibilities identification, sustainability and tactical choices.

Student Experience

About 5,000 students and 300 faculty-members participated during the pilot phase and were exposed to EduVerse. Students noted that it was an interactive experience and very engaging to conventional e-learning. According to one graduate student, it was like walking into a true campus, except the fact that you could meet students of other emirates or even international.

Students in entrepreneurship and management were expected to create virtual start-ups with the help of in-world resources and use of virtual tokens. The teams were required to co-develop business models, validate the concept with digital consumers and pitch their projects to academic and industry judge panels. Such activities were to model real life challenges like shortage of resources, negotiation and market feedbacks and this encouraged the effectuation logic of entrepreneurship (Sarasvathy, 2001). The reflective experiences of students in the immersive setting suggested that the immersive environment contributed to the removal of anxiety about delivering speeches in front of an audience, fraternizing with those of the opposite gender and nationality, and developing confidence in decision-making.

Academic and Institutional Perspectives

The reactions of the faculty to EduVerse have been variegated but were apprehensively favorable. Teachers had a positive attitude towards interactive learning, live simulations and participation analytic, although they were worried about the lack of fidelity of learning and the learning curve. One lecturer remarked, *“I can be awe-inspired by the technology but the difficulty comes in putting it into any meaningful evaluation”*. Learning needs to be measured, not engagement. The university reacted by forming a Digital Pedagogy Taskforce and enacting a data-ethics model that complies with the UAE Federal Data Protection Law No. 45 of 2021 to make sure that its use is ethical and outcome-oriented.

Challenges and Lessons Learned

Although EduVerse gained strong student interest, several challenges emerged during its first year of implementation.

- Access and Infrastructure: Not all students possessed VR-ready hardware or high-speed internet, which limited participation. To address this, the university introduced mobile-friendly and low-bandwidth modes, ensuring inclusivity (World Bank, 2024).
- Pedagogical Readiness: Some faculty members initially used the environment as a substitute for physical lectures rather than a new form of learning. Continuous professional development became critical for transforming teaching practices (Mystakidis & Lympouridis, 2024).
- Digital Fatigue: Students reported eye strain and mental fatigue after long sessions in VR. The university subsequently implemented shorter modules and reflection breaks, aligning with cognitive load research (Makransky & Lilleholt, 2018).
- Cultural Balance: Designers needed to balance global design trends with local cultural expectations, ensuring modest avatar representation and gender-sensitive interaction protocols.

Despite these issues, early evaluations indicated higher engagement rates than in conventional online courses and a measurable improvement in teamwork and project completion.

National and Global Relevance

Tsinghua University in China unveiled digital twins of its campuses and KAUST in South Korea deployed its Global Metaverse Campus to Kenya at the time of EduVerse launch. Nevertheless, analysts pointed out that the UAE case was unique due to its alignment with the national policy, working with industries, and bilingualism (Canales, 2025). A report prepared by Oxford Business Group (2025) assured that profound learning in the UAE does not focus at a single institution but could be seen as a nationwide trend: colleges and universities are integrating extended reality technology to promote employability and entrepreneurship according to the Artificial Intelligence Strategy 2031. Abukhalaf, Charles, and Hill (2024)

and Youssef et al. (2025) surveys indicate that metavalence of learning is perceived favorably by most UAE students and educators; however, cost, privacy, and long-term feasibility are issues of concern. EduVerse, therefore, is a prime example of how the UAE universities are putting government policy into action by developing ecosystems that are a combination of technological innovation and pedagogical reform.

The EduVerse project shows that immersive learning can serve as an effective driver of the development of entrepreneurial and cross-cultural competencies in the realm of higher education. The online college dissolved the line between theory and practice, and enabled students to practice the real world in making decisions in a safe and interactive setting. Technology does not ensure change, but similar factors, such as capacity amongst the faculties, cultural sensitivity, and coherence in pedagogy, depend on their success. The narrative at EduVerse represents the potential and the complexity of using metaverses in education in the changing environment of the higher-education sector in the UAE.

Case Questions

1. **Pedagogical Alignment:** How can immersive platforms like EduVerse be systematically integrated into curriculum design to ensure measurable learning outcomes rather than superficial engagement?
2. **Ethics and Access:** What governance frameworks and equity strategies should UAE universities adopt to protect learner data, ensure inclusion, and balance technological ambition with accessibility?
3. **Entrepreneurial Learning:** In what ways does immersive, simulation-based learning complement or challenge traditional entrepreneurship education, particularly in multicultural environments such as the UAE?

Key definitions

Metaverse: "A continuous, immersive, and three-dimensional virtual universe that enables instant communication, collaboration, and learning through digital avatars and simulations."

Cross-Cultural Competence: "The capability of individuals to conduct, communicate, and cooperate with people from different cultural backgrounds effectively and respectfully."

Entrepreneurial Competence: "A mixture of knowledge, skills, and attitudes that denote the readiness of a person to spot opportunities, come up with new ideas, take action, and manage a business effectively."

Immersive Learning: "A teaching method that makes use of virtual or augmented environments in order to give experiential, interactive, and engaging educational experiences."

Cultural Intelligence: "An individual's ability to function well in culturally diverse situations, which includes the aspects of awareness, motivation, and behavioural adaptability."

Experiential Learning: "A learning process that relies on reflection and active experimentation, thereby enabling learners to extract practical insights through real or simulated experiences".

Digital Pedagogy: "The use of digital tools and technologies as part of the teaching strategy to improve learning, engagement, and innovation."

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