# *Rapid eLearning Development Tools in the UAE: Introduction of Structured eLearning Environments for Undergraduates*

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**Abstract**
This study employed a blended learning approach, integrating a microlearning module on 'Change Management' into an undergraduate business course curriculum in the United Arab Emirates. This context being of interest because of the high 'Uncertainty Avoidance' dimension typical of the predominant Arab culture in the country. The study therefore, aaddressed the question of student adaptability and requisite support required for a successful blended learning experience in this cultural context. A cross-sectional survey was conducted with a sample group of 40 undergraduate students. A qualitative thematic analysis was applied, using Hofstede's cultural dimension of 'Uncertainty Avoidance', to measure student preference for either a structured or flexible learning environment. That methodological approach captured rich description from feedback, which allowed for an in-depth understanding of students' learning preferences and experiences with the micromodule. The study contributes to the field of academic knowledge about the influence of a cultural dimension for learner engagement. The dual value for teaching praxis from this study is firstly, consideration for the implemention of learning technology in international business classrooms and secondly, the implications of the introduction of pedagogical innovation for students in a nation experiencing rapid changes in both educational and economic spheres. The outcomes of this study provide insights into the practical application of rapid eLearning tools, offering strategies for educators and institutions of Higher Education.

Keywords: Rapid eLearning Development, Change Management Education, Cultural Adaptation in Learning, Hofestede's Cultural Dimensions, Arab Culture, Uncertainty Avoidance

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## Introduction

In an era marked by global uncertainty, the emergence of the COVID-19 pandemic catalyzed an unprecedented shift in education systems worldwide, which propelled Higher Educational Institutions (HEIs) toward online learning modalities. This sudden transition was not just a temporary measure, but became a catalyst for a longer term recognition of the potential for electronic learning (e-learning) within a traditional face-to-face (F2F) classroom. As HEIs emerged from the societal constraints wrought by the pandemic, the increased technical capabilities of faculty members, combined with the positive attitude of students, suggested the prolonged viability of a blended learning approach. More recently, the emergence of generative Artificial Iintelligence (AI) has increased the dilemmas and the potential of online learning. An increasing number of studies illustrate the feasibility of integrating technology in F2F education, demonstrating a growing interest in hybrid models (Singh et al. 2021). Blended Learning (BL) is traditionally defined as the integration of conventional classroom methods with online activities (MacDonald, 2006; López-Pérez et al., 2011), and has evolved significantly in response to educational challenges (McKeller & Barton, 2023).

This BL approach combines the strengths of asynchronous learning (such as self-paced modules) with the more traditional F2F instruction (including enhanced student-instructor interactivity), providing university students with a wider-ranging educational experience. An important factor in the decision to adopt BL and to explore AI tools, e.g. 'ChatGPT', is the capacity of technology-enhanced education to impact teaching and learning through offering unparalleled accessibility and flexibility to individual learners. Dimitrov and Kovatcheva (2022) expound on that aspect in emphasizing that BL benefits ensure it is more than just an educational trend. Instead, BL has evolved into a holistic approach, giving learners instantaneous and unlimited access to educational resources at the click of a button. Learners have immediate access to enhanced materials and having that access empowers them to engage with these resources at their convenience. This flexibility is instrumental in accommodating diverse learning styles and schedules, thus enhancing the overall efficacy of the educational process. The evolution of BL, especially in the context of higher education, signifies a paradigm shift in how knowledge is imparted in the digital age that generative AI will also accelerate.

The necessity for a BL approach was particularly underscored by critiques of earlier large-scale e-learning projects, which were criticized for lacking human interaction and support essential for student learning (Jones & Peachey, 2005; Jones & Lau, 2010). This criticism led to the enhancement of BL to include the flexibility of e-learning and vital human contact, thereby capturing the best of both worlds.

In the context of integrating online and traditional learning methodologies, which provide a spectrum of options to cater for learners' varied needs and preferences, Staker and Horn (2012) identified four primary models of hybrid education (part BL and part F2F). including the: 'Rotation' (students rotate on a schedule), 'Flex' (individually customized and fluid schedule), 'A La Carte' (pick and choose), and 'Enriched Virtual' (required F2F learning with instructor and then complete remaining coursework remotely). Each of these four models offer a unique approache to facilitate learning. The shift towards these models indicates the education sector's response to the challenges and opportunities presented by the necessity for remote learning during the pandemic and the subsequent transition back to the classroom. This has resulted in a renewed interest in the relevance of microlearning units, such as those created, like this study, on the platform 'Articulate Rise 360.'

In our study, it is the ‘Enriched Virtual’ that is the framework of exploration for integrating a microlearning module into a university-level traditional business course curriculum. This BL model was chosen for its flexibility, allowing students to supplement their classroom F2F instruction with additional online learning modules. This method aligns with the increasing preference for autonomous, self-paced learning experiences, which have become more prevalent after the pandemic's disruption to traditional education.

In this study, we also chose to explore microlearning. The concept further redefines BL by breaking down course content into smaller more manageable segments for the learner. Sometimes referred to as a "learning snack," microlearning focuses on a single topic and can be consumed quickly, making it ideal for students with busy schedules and immediate problem-solving needs. Unlike traditional eLearning courses, which resemble a complete meal with various components, microlearning provides concise, focused content that addresses a single objective or small number of learning outcomes.

Microlearning, as defined by Hug (2010), intersects with the domain of mobile learning, suggesting that educators can leverage microlearning tools to create content that is inherently compatible with mobile devices. This approach to learning is defined by its brevity and digital focus, allowing for quick, concentrated learning experiences. Practical applications of microlearning can range from short digital text excerpts and quick video clips, followed by a concise quiz, to micro podcasts that learners can consume on the go.

Microlearning has been integrated into BL strategies, mainly through using platforms such as ‘Articulate Rise 360’, which facilitates the creation of concise educational content.‘Articulate Rise 360’, a tool known for its rapid development capabilities, allowed this investigative team to design and deploy microlearning content efficiently. We argue that our module on ‘Change Management’ aligned with learner and instructor demands for timely and relevant content dissemination in educational settings.

The mobile-friendly and multi-device compatibility of ‘Articulate Rise 360’ ensures that learners have access to educational material across various digital platforms, so they can watch content on their phones or their laptops at any time and in any place, thus accommodating the contemporary trend of mobile and flexible learning. The platform's design also allows for educational content to be readily updated, supporting the dynamic nature of knowledge and the necessity for continuous learning and enabling user feedback. Both these features were taken into account for development of the learner survey, as well as how the learners accessed information, plus respondant suggestions for improvement.

While not the only eLearning development software option, ‘Articulate Rise 360’ capacity to streamline the creation of micro-learning modules does align with the instructional needs of university educators and students and, therefore, facilitated the development of short, targeted learning experiences integral to a comprehensive BL strategy. This reflects a shift towards educational methodologies prioritizing flexibility, learner autonomy, and the efficient use of technological resources in the learning process, significant trends which will continue particularly given the increasing prevalence of generative AI.

In summary, microlearning in a BL environment serves a tripartite function: it prepares learners pre-training, enhances the in-session learning experience, and reinforces knowledge post-training. Microlearning aligns with the learner's journey, offering tailored content that is

both accessible and efficient, ensuring continuous engagement and assimilation of knowledge.

The advent of BL has revolutionized the educational landscape on a global scale and brought forth unique cultural dynamics within specific regions. As we transition from the broader context of BL to the particular milieu of the UAE, we argue that it is essential to consider the cultural dimensions that influence the adoption and implementation of BL.

With its rapid technological advancement and diverse international population, the UAE presents a distinctive case for the study of BL. Kemp's (2013) study delves into the impact of the cultural dimension of 'Uncertainty Avoidance' for the adoption of BL among management undergraduates in the UAE. This study revealed students' learning experiences were both positively and negatively affected by their cultural dimension of 'Uncertainty Avoidance' when introduced to BL, particularly notable because of their technological skills, their reactions to course organization, and their appreciation of online feedback. Furthermore, the results of the study underscored student challenges with the novelty of online activities and raised the demand for higher-quality research methods.

Kemp's (2013) findings are particularly relevant to our study, which aims to explore the effectiveness of a microlearning module centered around 'change management' within the UAE's business education sector. Our research considers the cultural backdrop of high 'Uncertainty Avoidance' characteristics in the UAE and how that shapes students' engagement with new and interactive learning technologies. By integrating rapid eLearning tools like 'Articulate Rise 360' within a structured pedagogical framework and local values, our study addresses the distinctions of student adaptability and the requisite support for successful BL experiences.

In this regard, our study seeks to contribute to the body of knowledge on implementing learning technology in international business classrooms. By examining the early stages of transformation involving microlearning, we aim to understand the implications of such pedagogical innovations for students in a nation navigating rapid changes in its educational and economic spheres. The outcomes of this inquiry will provide insights into the practical application of rapid eLearning tools, offering strategies to educators and HEIs for effectively harnessing technology to enhance teaching and learning, whilst also considering the cultural dimensions that influence learner engagement in the UAE.

In light of the evolving landscape of eLearning and its increasing adoption in higher education in diverse settings around the globe, understanding student preferences from a variety of cultures and their experiences becomes pivotal for effective course design and delivery. We argue that this is particularly crucial when considering undergraduate students studying in the UAE, who represent a diverse demographic with varying learning styles and cultural backgrounds. A key aspect in this context is the role of cultural dimensions, such as 'Uncertainty Avoidance', which significantly influence learning behaviors and attitudes. The feedback from undergraduate students on the change management module, developed using 'Articulate 360', offers a unique opportunity to delve into these aspects. Feedback not only sheds light on learner preferences for structured versus flexible learning approaches but also provides a window into how these choices align with broader cultural traits. Therefore, to deepen our understanding and enhance the effectiveness of eLearning modules, it becomes essential to ask:

RQ1: *"How does Hofstede's cultural dimension of 'Uncertainty Avoidance' influence undergraduate students' preferences in the UAE for structured versus flexible learning approaches in an eLearning environment, as demonstrated by their engagement with the change management module developed in 'Articulate 360'?"*

This question aimed to investigate the impact of cultural factors, specifically 'Uncertainty Avoidance', on undergraduate students' learning preferences within an eLearning module. It seeks to understand how the local and regional cultural dimensions shape their attitudes towards structured and flexible learning methods.

RQ2: *"What are the key factors contributing to the effectiveness of eLearning modules for multicultural undergraduate students, in the context of structured and flexible learning environments, as reflected in the feedback on the change management module?"*

This second question delves deeper in exploring the broader aspects of eLearning module design and delivery, to discover what resonates with undergraduate students. It is focused on identifying which elements within both structured and flexible learning environments contribute most significantly to the effectiveness of eLearning from the perspective of undergraduate students.

**Designing the Microlearning Unit on 'Change Management'**

The microlearning unit on 'Change Management' was crafted by two Mass Communication students of Arab origin, co-authors of this research paper, under the supervision of a multidisciplinary team of investigators. This project represents a collaborative effort combining academic insights and practical application. A subscription to 'Articulate' was secured to facilitate the design process, enabling the research team to tailor the content and structure based on the course material provided by the faculty member originally teaching the change management module.

**Structure and Content**

The unit's structure and content were purposefully organized to maximize learning effectiveness. The content creators reflected that they took special interest in portraying the students' characteristics by creating a persona (a united representation) that was catered to in order to create the best learning experiences. The module commences with an engaging welcome video from the faculty member, framing the context and purpose of the module. The content delves into the concept of change, highlighting both its inevitability and the common resistances to change when encountered by individuals and business leaders. Salient facts about change management underscore its complexity and associated challenges within the context of the third-year undergraduate course, 'Business Communication'. Definitions, such as 'Organizational Change' and 'Change Management,' were provided to lay a solid foundation for understanding.

The unit explored theories of both internal and external forces of change, illustrating the complex nature of the phenomenon of change. It introduces various change management tools, to empower students with practical solutions for navigating change. The conditions necessary for successful change implementation were also elaborated upon, offering insights into effective change management strategies.

Notably, the module presents ‘Lewin's Three-Stage Change Model’, a classic framework for understanding organizational change. Additionally, it references the ADKAR (Awareness, Desire, Knowledge, Ability and Reinforcement) Model, providing an alternative perspective on managing change effectively. The unit culminates with a closing message from the professor, encapsulating key takeaways and offering a comprehensive summary of the topic. This curated assembly of content and structure is structured to provide as rich and impactful learning experience for students as possible as they engage with this microlearning unit.

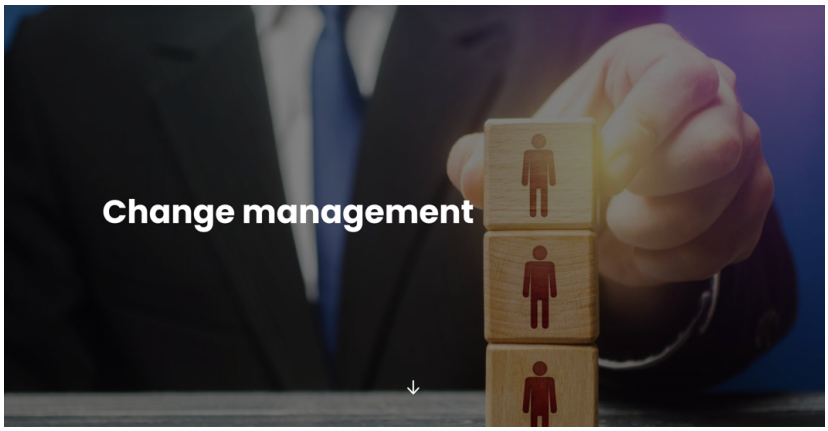


Figure 1: Opening splash-screen of the ‘Change Management’ Microlearning unit

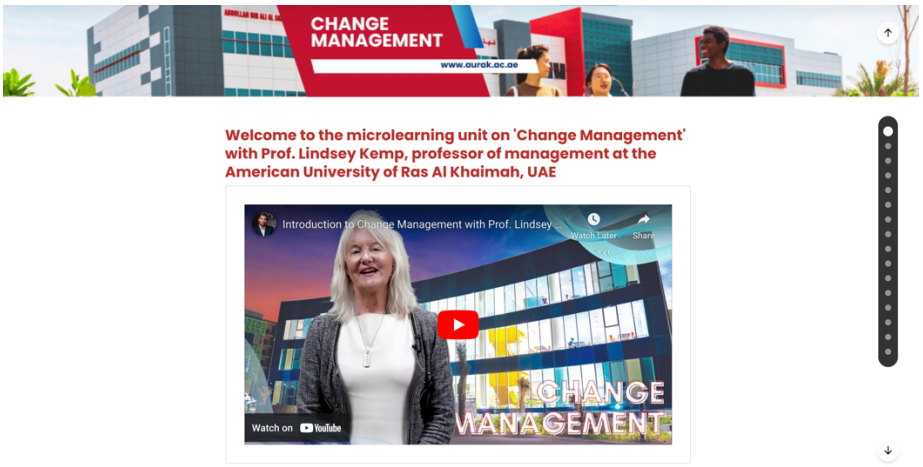


Figure 2: The unit opens with a video introduction by the faculty member

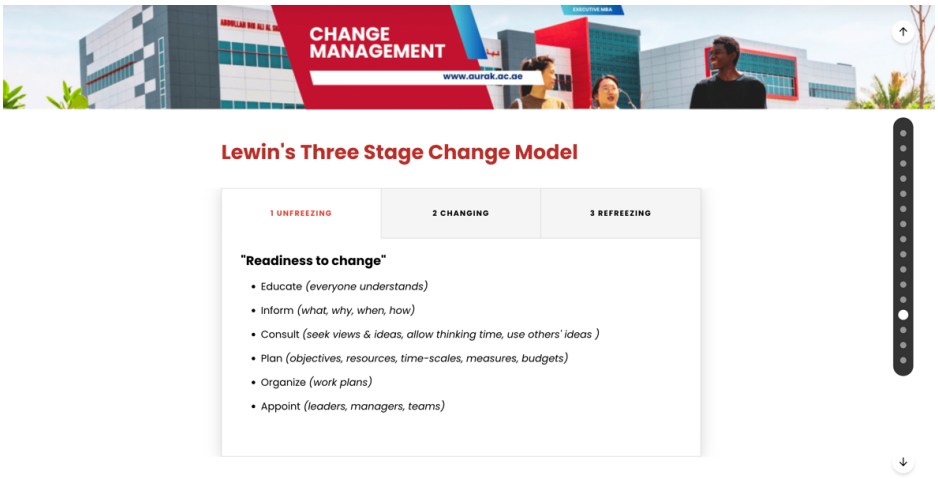


Figure 3: Example of interactive feature such as ‘Accordion Interactivity’ in the unit

## Interactive Features

The 'Change Management' microlearning unit, developed with ‘Articulate Rise’, features several interactive elements to enhance learner engagement outlined below.

- **Accordion Interactivity:** Condenses extensive text into digestible sections under clickable headings, ideal for exploring complex concepts without overwhelming learners.
- **Tabs Interactivity:** Facilitates learning about related topics through clickable tabs, effectively organizing and presenting a large volume of information.
- **Flashcard Grid and Stack:** Interactive flashcards that reveal information upon clicking, with a grid layout for multiple cards and a stack format for sequential exploration.
- **Labeled Graphics:** Uses images with clickable hotspots, enabling learners to investigate different components or parts of an equipment visually.
- **Process Block:** Displays linear concepts in a step-by-step manner, functioning like a slideshow to guide learners through processes.
- **Button Navigation:** Offers navigational ease and external linking through clickable buttons, which can lead to external sites, different course sections, or facilitate email communication.

These features collectively offer designers the chance to create a dynamic and engaging learning environment and the flexibility to choose to provide more or less structure, present the learning material of the module as dynamic or more simply or to use a different color palate.

## Methodology

This study combines methodologies in order to provide a comprehensive analysis of undergraduate student feedback on a change management eLearning module and to examine if there is a culturally-based connection between the use of a BL module and student satisfaction. Developed using ‘Articulate 360’, this module was utilized by predominately Arab students at an American University in the UAE, allowing exploration of the effectiveness of the module and to understand students' learning preferences and experiences in the context of structured versus flexible learning approaches.

## Instruments and Data Collection

1. **Data Sources and Tools**:
    - The primary data source was an online ‘Google’ forms utilizing an ‘Excel’ spreadsheet, to capture feedback from undergraduate students through a structured feedback mechanism within the eLearning module.
    - Additionally, a confidential survey was administered to different cohorts of university students to evaluate their satisfaction and experiences with BL. This survey employed a narrative data collection approach, focusing on individual insights and interpretations.
    - ‘Padlet’, an online interactive bulletin board, served as a secondary tool for collecting student feedback. This platform allowed asynchronous submission of reviews and comments, offering diverse insights into student experiences with the module.

2. **Feedback Content and Data Points**:
    - The feedback included qualitative data in the form of text comments, where students shared their views on the module's structure, content clarity, and the flexibility of the learning path.
    - The survey sought to measure levels of student certainty and uncertainty regarding the introduction of BL, capturing their unique insights and interpretations.

3. **Demographics**:
    - The participants were primarily undergraduate students enrolled in a business course, with the survey extending to a broader demographic of university students in the UAE.

4. **Research Design**:
    - Adopting a cross-sectional survey design, this observational study analyzed information about a population of university students at a specific point in time, complemented by the longitudinal feedback data from the eLearning module.

5. **Data Collection Summary**:
    - The duration of data collection was aligned with the completion of the eLearning module, ensuring timely and relevant feedback.
    - The volume of data from both the survey and the eLearning module feedback provided a rich qualitative dataset for analysis.
    - Throughout the data collection process, student confidentiality was rigorously maintained to encourage genuine and honest responses.

**Data Analysis Approach**

- The study employed qualitative methods, primarily thematic analysis, to identify prevalent themes in the student feedback.

- The analysis was aligned with Hofstede's cultural dimensions, particularly focusing on 'Uncertainty Avoidance', to understand students' preferences for structured or flexible learning environments and their overall satisfaction with the BL experience.

**Sample and Research Instrument**

***Sample***

The study surveyed a total of 40 undergraduate students enrolled in a 'Business Communications' class at the XXX (name of university) during the Fall semester of 2023. Reflecting the diversity of the UAE's student population, the members of the sample group includes approximately 40 percent local Emirati students, 30 percent from Arab countries such as Jordan, Syria, Egypt, and Palestine, 15 percent from South Asian countries, e.g. Pakistan and India, and 15 percent from various nationalities including African countries such as Sudan, Tanzania, and Ethiopia. The School of Business was selected for its representative demographic spread which aligns with the broader student body of the UAE, allowing for potential generalization of the study findings to a wider population.

***Research Instrument***

The university maintains comprehensive demographic data on its student population, including age (with most students aged between 21-24 years), gender (approximately 55%

male and 45% female), and nationality. A notable portion of the student body, although nationals from countries other than the UAE, have been born and raised locally, with half of the foreign nationals enrolled indicating this background. This diverse cultural tapestry, with many students having been influenced by the dominant Arab culture and its high score for Hofstede's dimension of 'Uncertainty Avoidance', provides a rich context for examining the impact of cultural dimensions on elearning.

The learning module, along with the accompanying survey, was integrated into the university's learning management system (LMS), 'Blackboard Ultra'. The survey was designed to elicit in-depth student narratives, asking participants to reflect on four key areas: their review of the module, learning outcomes, applicability of the learned content, suggestions for improvement, and any additional comments they wished to share.

Following the precedent set by Kemp (2013), the survey was kept succinct with 'open' questions to foster detailed responses. Participation in the survey was not tied to any extrinsic monetary incentives. Anonymity and confidentiality were upheld using the LMS's features that ensure student names and identifiers are not disclosed.

**Data Collection Approach**

To garner in-depth insights and foster continuous improvement of the eLearning module, participants were engaged in a reflective exercise. The students were prompted to provide feedback on several aspects of their learning experience as the survey was structured to guide students through a sequence of reflective prompts. These prompts invited students to:

- Reflect on their process of engaging with the module and the duration of their review.
- Articulate their learning outcomes, specifically regarding change management concepts.
- Consider the practical application of these concepts within the realm of business communications and project their impact on future professional roles.
- Offer constructive suggestions for enhancing the module's structure and content to better facilitate student engagement and address knowledge gaps.
- Share additional thoughts or queries pertaining to the change management module.

The questionnaire eschewed the traditional five-point 'Likert' scale format to allow a more nuanced exploration of student experiences. Designed to align with 'Bloom's' taxonomy of critical thinking skills, the survey progressed from basic comprehension to application and evaluative judgement. The research team, comprised of three professors with expertise in BL, content creation, and digital media, meticulously reviewed the survey instrument to ensure content validity and relevance to the study's aims.

**Findings**

Hofstede characterized the national culture of Arab countries, through cultural dimensions, where they scored high 'Power Distance', relatively strong 'Uncertainty Avoidance', and more Collectivism than Individualism with moderate Masculinity/Femininity values. This cultural backdrop provided a critical lens through which the feedback on the eLearning module could be analyzed, particularly in the context of the UAE (Hofstede et al., 2010).

The qualitative analysis aimed to evaluate feedback from undergraduate students on a stand-alone eLearning module on 'change management' developed using 'Articulate 360'. This

module was introduced into a business course at the xxx University. Feedback was collected from a diverse group of undergraduate students (#40) to assess their learning experience.

Grounded in the cultural dimension of 'Uncertainty Avoidance' (UA), this analysis draws upon the findings of Kemp (2013), who noted a preference for 'risk avoidance' within the learning environment among undergraduate students in the UAE.

From the feedback, two predominant themes emerged, indicating the undergraduate students' learning preferences:

***Structure***
The feedback revealed a significant preference for structured learning, with 46 instances where students expressed a desire for well-defined course structures and content. For instance, an undergraduate student noted, "It was easy to follow the module because of its structured format." This preference aligns with a higher UA, suggesting that clear, organized content is essential to these students.

***Clarity and Understanding***
Clarity in instructions and content emerged as a crucial theme, noted 24 times in the feedback. Undergraduate students demonstrated a high value for straightforward and comprehensible learning materials, indicative of strong UA tendencies.

***Appreciation for Flexibility***
Despite the overall preference for structure, there was also an appreciation for flexibility in the learning process. This was reflected in 19 instances where students acknowledged the benefit of having control over their learning journey, as one student remarked, "The module allowed me to choose what to study first, giving me control over my learning."

***Differential Insights From Undergraduate Feedback***
The undergraduate feedback underscores a significant inclination toward clarity and structured formats, reinforcing the cultural tendency toward higher UA within this demographic. However, the recognition of flexible learning elements suggests a nuanced balance of preferences that eLearning design must accommodate.

***Implications for eLearning Design***
These findings from undergraduate students highlight the need for eLearning modules that are tailored to the cultural context of the UAE. A clear, structured learning environment, complemented by flexible learning options, is crucial to meet the diverse needs of the student body.

**Student Reflections on Structured Clarity and Flexible Learning Paths**

In analyzing the feedback from undergraduate students on the change management eLearning module, a distinct preference emerges for structured and clear learning experiences. This preference is rooted in a cultural context that highly values UA, as theorized by Hofstede. Students consistently expressed a desire for a learning environment characterized by well-defined objectives and straightforward content delivery. This inclination aligns with a higher UA, where predictability and order are paramount in educational settings. Simultaneously, there was an acknowledgment of the value of flexibility within this structure, allowing students to tailor their learning journey. The following student quotations illustrate these

themes, shedding light on the nuanced balance of structure and flexibility that caters to diverse learning preferences.

**Quotes Reflecting Comfort With Structure and Clarity**

- "It was easy to follow the module because of its structured format." - This quote suggests a preference for a well-organized approach to learning, consistent with higher UA.

- "The structured layout...appreciated." - Acknowledgement of structured content indicates a desire for clarity and organization.

- "I liked how the module was designed...to keep [us] focused." - A well-thought-out design that aids concentration aligns with a preference for structured learning environments.

- "It took me around 25 minutes to check out the module...spent on Lewin's three-stage transformation model..." - Focusing on specific models shows a methodical approach to learning.

- "The taking notes approach allowed me to learn...and also helped me to recall it later." - A systematic method of learning, indicating higher UA.

**Quotes Reflecting Openness to Flexibility Within Structure**

- "The module allowed me to choose what to study first, giving me control over my learning." - This indicates a balance of structured content with the flexibility of choice.

- "It took me 20 minutes to review my online self-paced activity..." - Comfort with self-paced learning suggests an openness to a certain degree of flexibility.

- "I reviewed the change management module online...I spent approximately an hour to fully view, understand, and receive the final message." - The time invested reflects a willingness to explore the content at one's own pace.

These insights from the feedback illustrate that while there is a significant inclination towards structured learning, as indicated by the multiple mentions of a "structured layout" and appreciation for "clear" and "focused" content, there is also an appreciation for the flexibility offered by the module. The ability to control the pace and path of learning, as some students highlighted, represents a balance between the need for structure and the benefits of a flexible learning environment. These findings should guide the design of future eLearning modules, ensuring they provide clear, organized content while also offering opportunities for learners to engage with the material in a way that suits their individual learning preferences.

**Conclusion**

The analysis of undergraduate feedback on the eLearning module emphasizes the importance of integrating cultural dimensions and learner preferences into eLearning design. By accommodating the varying degrees of UA and providing a balance between structured and flexible learning elements, educators can foster more effective and engaging learning

experiences for a diverse undergraduate cohort. Our study's findings resonate with certain aspects of previous research, illustrating common patterns in online learning behaviors.

Mirroring the findings of Fung (2004), this study also reveals a certain reluctance amongst learners towards specific aspects of online learning. In line with Fung's observations regarding students' disinclination to engage in online discussions, our data reflects a similar pattern among undergraduates. The participants in our study demonstrated a clear preference for well-organized and straightforward learning resources, favoring reading and structured study over interactive elements like discussion boards.

This preference for structured content over interactive online elements underscores a significant inclination towards traditional learning methods, even within online formats. Such findings highlight the need for eLearning platforms to evolve, offering features that enable students to tailor their learning journey to their personal preferences and learning styles.

In conclusion, the research underscores the critical role that cultural dimensions and learner maturity play in the design of eLearning experiences. Adapting content to suit different levels of learner understanding and ensuring a balance between structured and flexible components is key to enhancing engagement and learning outcomes. This approach becomes increasingly important in achieving successful educational results in diverse and multicultural academic settings, such as those found in the UAE. Our study contributes to the ongoing discourse on eLearning by confirming and extending the implications of previous research (Fung, 2004) within the context of the Arab Group's cultural characteristics as outlined by Hofstede (1991), providing a contemporary understanding that can be applied to the design of eLearning experiences in similar cultural settings.

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