Studies in Technology Enhanced Learning

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technology enhanced learning in the MENA region

A SPECIAL ISSUE EDITED BY
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11 full-length articles,
3 commentaries
and an editorial
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Technology enhanced learning in the MENA region: Introduction to the Special Issue

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1. Introduction

This special issue of the journal Studies in Technology Enhanced Learning is the result of collaboration between the Centre for Technology Enhanced Learning, Lancaster University (UK) and the Centre for Research in Digital Education, the British University in Dubai (UAE). Both centres wish to recognise that ‘technology enhanced learning’ (TEL) is a deeply contextualised phenomenon: socio-culturally, historically and economically. This special issue therefore focusses very specifically on TEL in the Middle East and North Africa (MENA), a region with a rich history of TEL initiatives and connections to the global economy yet with many contextual particularities.

In recent decades, governments and other influential actors across the MENA region have expressed the desire to move from ‘oil-reliant’ to ‘knowledge’ economies, and have invested heavily in education and technology as a consequence. Technology is thus positioned as a ‘key element in modernization and reform of education’ (Lightfoot, 2016). Examples from across the region abound. In Saudi Arabia, the Tatweer Project initiated in 2007 aims to improve the educational competence of the Saudi population (Nurunnabi, 2017), with Tatweer Smart Schools set up to improve teachers’ professional development, increase the quality of education and integrate ICTs into teaching and learning (Wiseman et al., 2013). In Bahrain, the King Hamad
Project for Future Schools places a similar focus on technology in education, and likewise the Omani government sees technology as essential to improving the quality of education. Indeed, the Omani Ministry of Education has deployed a comprehensive set of guidelines for technology-assisted instruction across all grades and levels of the entire national curriculum (Oxford, 2017).

They are not alone. The UAE, ‘the Middle East’s power broker’ (England & Kerr, 2017), is not content with regional recognition, and with Vision 2021 the UAE has made clear its desire to become a leading player on the world stage. A central pillar of this vision is a ‘First-Rate Education System’ feeding educated human capital into a ‘Competitive Knowledge Economy’ (UAE, 2010). The UAE Ministry of Education has implemented a bold series of five-year plans, Education 2020, to transform education and ensure that the UAE’s youth are able to compete internationally at both universities and in the global marketplace. In 2012, the federal universities in the UAE launched a specific iPad Initiative, which saw more than 14,000 students across the country issued with Apple’s well-known tablet computer — a move that was expected to revolutionise teaching and learning (Cavanaugh et al., 2013b; Cavanaugh et al., 2013a). Similarly, in 2016 Oman signed a memorandum of understanding with the national telecom provider, Omantel, to provide 3,500 Huawei tablets for distribution across a certain number of schools in the country. While technologies change, the aspirations remain reassuringly familiar. Laptops may have replaced tablets in the UAE, yet classrooms across the region remain ‘Smart’; teachers and students are connected to Learning Management Systems and the future of education is very firmly invested in technology. That situation has only been intensified in the wake of the COVID-19 pandemic with moves to online learning in schools and universities across the MENA region.

Globally, the world of education has not been slow to embrace technology, from ‘prehistoric paintings flickering in the light’ (Duval et al., 2017) teaching ancestral children to hunt, to the fully-online delivery modes adopted by modern universities in the post-COVID 19 world. The prevailing view of education policy makers has been that the introduction of technology is ‘a desirable outcome that will lead to more learning’ (Scanlon & Issroff, 2005). Governments in the MENA region have been at the forefront of “putting their money where their mouths are”, and the subsequent investment and political will to promote TEL has seen the region become an area of real interest where the use of TEL in practice across all education sectors is concerned. It is worth mentioning that many of the imported education systems mentioned here rely on English as the language of instruction, and are ‘based on a Western model that is now the global cultural ideal’ (Spring, 2008, p. 334). The importation of Western models of education has also necessitated the recruitment of large numbers of expatriate education professionals. These individuals come from not just MENA, but the world as a whole, and this multicultural group is also importing its own TEL practices, pedagogy and beliefs. It is this rich context that this special issue aims to explore. The geographical boundaries within which the papers in this issue focus their attention reflect the vast experience and expertise that exists among TEL practitioners in the Middle East and North Africa.

As previously mentioned, this special issue of the journal is the result of a collaboration between the Centre for Technology Enhanced Learning (CTEL), Lancaster University, UK and the Centre for Research in Digital Education (CRDE), the British University in Dubai, UAE. CRDE, given its location, has an obvious interest in TEL in the region; indeed, its interdisciplinary work and consultancy places heavy emphasis on the specific needs of the MENA region. CTEL, on the other hand, is an international network that has benefited from the input of members in the region over many years, and also places heavy emphasis on TEL as a situated phenomenon in its fundamental approach. The editorial collective for the special issue—consisting of Tendai Charles and Christopher Hill (CRDE), and Sebah Al-Ali, Rob Miles, and Brett Bligh (CTEL)—represents not only both centres, but also the diversity of TEL in the Middle East and North Africa. Collectively, we aimed to exploit our prior experience and connections with institutions in the region to bring the special issue to fruition. As is evident from the range of authors who responded to the call, many TEL practitioners and researchers in the region are in fact non-nationals in those countries where they live and research, and this unique situation also contributes to the diversity of TEL in the region, where the influence of Anglocentric education systems is brought into contrast with the cultures they interact with.

The call for papers generated considerable interest, and following the peer review process a total of 14 papers have been included in this special edition. The 14 papers that have been published are as diverse as TEL and its practitioners in the region, with papers from Egypt, Kuwait, Qatar, Oman, Saudi Arabia and the United Arab Emirates all included here. Similarly, a wide cross-section of the education sector is included, from K12 to tertiary education at both public and private institutions.

The papers have been grouped into four clusters in an
attempt to give a sense of progression and direction to the special edition. Doing so is, of course, a pursuit fraught with danger given the number of different ways in which the papers could be categorised. Even where we have constructed relatively simple clusters, as below, many papers could certainly fit into more than one. Our priority in doing so was to try to support a conversation to emerge about a range of different issues affecting TEL in the region. We also sought commentaries on the papers in order to further support that conversation, which is part of the remit of Studies in Technology Enhanced Learning (Bligh & Lee, 2020). We look forward to continuing that conversation for some time to come, and we would like to thank the authors of all the articles and commentaries that have been included in the issue.

2. Strategic issues for teaching

The first group of papers falls under the title of ‘strategic issues for teaching’. By ‘strategic issues for teaching’ we are referring to how technology is associated with attempts to challenge and reshape what ‘teaching’ means, and how that can be understood conceptually and strategically.

In the first paper, Hurley (2021) examines how dialogic learning in a Gulf-Arab women-only university context can be theorized. As the COVID-19 pandemic has pushed Gulf higher education classes online, the author investigates how dialogism occurs for Arab female learners, given the socio-political and contextual factors at play. The author contests the view that dialogism occurs solely in Western terms and develops a framework that theorises Gulf-Arab women’s learning practices. The paper concludes that online learning is not automatically dialogic. Instead, dialogism occurs at individual, social, technological and gendered levels. This is a fascinating and important contribution to pedagogy and TEL in the MENA region in particular.

The reaction of education institutions and practitioners to the COVID-19 pandemic is, of course, an emerging theme. As classes in the region were forced to move online, the use of technology to facilitate and effectively teach has been called into focus. In the second paper, Johnson (2021) highlights this fact. As a result of COVID, teachers in the UAE have had to quickly adopt remote learning, and have faced challenges relating to student engagement, the use of new tools and the need to adapt face-to-face teaching to the online environment. Furthermore, English teachers have also been called upon to integrate 21st century skills into curricula that has suddenly moved online. In both cases, clear strategy has not been present as teachers have had to react quickly to the new reality. The author argues that instructional design should be the focus of professional development, not technology. For Johnson, instructional design can be the catalyst for a dynamic and engaging learning experience that better prepares students for their academic and professional lives, and can provide teachers with the strategy to reshape their teaching effectively.

The third paper in this first section is Coutet’s (2021) commentary on one school in Saudi Arabia’s approach to Continuous Professional Development (CPD) that aimed to improve teachers’ online teaching proficiency. The author recognises the importance of successfully implementing effective instructional practices in the wake of the COVID-19 move to remote teaching, but also highlights how this experience can have relevance in longer term planning for CPD. At the same time, Coutet warns against making over-generalisations. The solutions to the sudden problems caused by COVID, argues, Coutet, cannot necessarily be applied to different contexts.

The papers thus far have largely been concerned with teaching where English is the medium of instruction. The final paper in this cluster, however, takes the TPACK Model, a key concept in TEL, as its theoretical framework, and focuses on teachers of Arabic as a foreign language (AFL). Essam (2021) finds that AFL teachers prefer trainers who can help them incorporate technology with a strong pedagogical foundation into their classes. The paper goes on to suggest a model for designing professional development programs, and also discusses theoretical implications for the TPACK model.

3. Introducing novel tools and pedagogies

The papers in this section are loosely grouped under the title of ‘introducing novel tools and pedagogies’. By ‘introducing novel tools and pedagogies’ we are referring to specific initiatives to develop and reimagine pedagogy on particular programmes and courses, and how those can be understood in relation to their specific pedagogical objectives.

Taylor (2021) also examines the UAE’s shift to remote learning in the COVID pandemic. The author explores 4 pieces of student work as case studies: specifically role-play, virtual protest and collaborative reading projects. Each of these were produced using the web-based tool VoiceThread in ways that aimed to create Communities of Inquiry. The paper finds that in all cases content, collaboration and community exist in both synchronous and asynchronous
modalities, creating high impact, innovative student learning in the face of COVID-19.

The second paper in this section is concerned with the introduction of novel tools. In this case study, Balliammanda (2021) explores the perceptions of teachers in Oman regarding the use of mobile devices such as smart phones, iPads and tablets in higher education classes. Taking a qualitative approach, the participants are able to express their opinions and perceptions based on personal experience and understanding. The findings take a realistic and critical stance. While there are perceived benefits, the author highlights a number of issues such as students deviating from tasks and highlights the need for continued testing and development of m-learning within Oman’s educational system.

The final paper in this section, “High School Students’ Experience of a 3D Printing Station at a Bilingual School Makerspace in Kuwait” (Eldebeky, 2021) sets out to examine the impact of 3D printers on the skills of high school students in Kuwait. Two theoretical models are used, the 21st century learning framework and the Dynamic Decision-Making Model. While the participants studied reported improvements to their skills in collaboration, communication and technology, the author also found a lack of connection between the technology and instructional value. Reasons for this are also suggested, namely the under-development of 3D printing resulting from its very novelty may in fact be at the root of this disconnection.

4. Supporting online and blended learning

In grouping the next set of papers under ‘supporting online and blended learning’ we are referring to attempts to move and support learning online, and the different challenges for teacher professional development and student engagement that doing so poses.

The first paper under this heading returns to dialogism, and sees Al-Ali (2021) describe the experience of one tutor in higher education in Kuwait. This paper goes against the mainstream feminist scholarship that sees silence as a negative aspect of dialogue in relation to voice, where silent women are therefore depicted as powerless and oppressed. The author argues, however, that silence is in fact an important aspect of dialogical interaction. Al-Ali takes an autoethnographic approach, and examines an email exchange with a student in dialogical terms. In the findings, silence emerges as intersubjective and dialogic, and as in need of collaboration as voice.

The next two papers both also address issues of student engagement. Saliba (2021) investigates students’ lack of engagement in online classes at a medical university in Qatar. An information literacy course at the university used blended learning, and while students engaged in the face to face component, the lack of engagement in the online classes led the author to adopt a case study approach in order to identify the causes behind this. Using surveys and in-depth interviews the findings presented suggest that where students do not attach importance to a topic they disengage. Students prefer just-in-time, online and asynchronous access with optional face to face attendance as opposed to the blended model currently employed by the institution.

Fazza and Mahgoub (2021) examine the challenges faced by a university in Qatar as COVID-19 caused the adoption of online and blended learning across the institution. In particular, it investigates faculty perceptions of a lack of student engagement in online classes. The paper takes a case study approach, and uses the Community of Inquiry Framework as a theory to guide the research.

Staying with the impact of COVID-19, Tuffnell (2021) again highlights that the pandemic has forced teaching online, and teachers have consequently faced a steep learning curve. Tuffnell argues that informal communities of practice can be quickly mobilised to provide support and training in order to ensure effective online teaching. The author suggests that that faculty learning communities thrive when experienced members facilitate learning through shared goals alongside collective input, participation and collaboration in the community.

5. Roles of technology in assessment

In the final section, ‘roles of technology in assessment’, we are intending to focus on that specific aspect of education involved in accrediting learning outcomes, which is so important given that gaining credentials is an increasingly central motivation for students to pursue education in the region.

The first paper, “Study Less, Learn More: Utilising Activity Theory to Advance Understanding of Game-based Learning as a Formative Assessment Tool within UAE Higher Education” (Minton & Bligh, 2021) utilizes activity theory as the theoretical framework, and focusses on students studying English in the UAE. This explanatory case-based study investigates digital game-based learning (DGBL) and its use in formative assessment. The specific platform under investigation is Kahoot. Interestingly, the author draws the
conclusion that in the specific context of this research DGBL did not, in fact, motivate students to study out of class, suggesting there are strong demographic and contextual influences on the success of DGBL as a formative assessment tool.

Remaining with the UAE, AlOkaily (2021) looks into the benefits of using device agnostic recording tools in order to provide students at a private online university in the UAE with speaking practice. While the paper highlights benefits such as improved fluency and confidence in spoken English, it also identifies three main barriers, namely technical, motivational and cultural issues that highlight the need for further research.

Finally, Nasseif (2021) examines the introduction of e-portfolios at a university in Saudi Arabia. Taking the technology acceptance model (TAM) as its framework, it explores the university’s readiness to adopt e-portfolios, and the acceptance of these among faculty and students. The author finds that technology skills and awareness play a large part in the acceptance, and the study also highlights the need for proper training and support.

References


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Dialogic theorising of Emirati women’s technology enhanced learning in the United Arab Emirates

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Abstract
This theoretical study develops a dialogic framework to review literature surrounding technology enhanced learning (TEL), in the United Arab Emirates (UAE). Dialogism is associated with the works of Russian formalist Mikhail Bakhtin (1895 - 1975), articulating the multiplicity and intertextuality of voices, perspectives and texts within any given genre or speech act. Dialogism has been developed within the field of critical pedagogy to foster openings for learners and educators’ varying and marginalised positionalities. In this study, the dialogic framework facilitates genre analysis of ten articles, reorientating underpinning assumptions. Findings probe a literary sub-text of non-citizen UAE educators and researchers’ transnational positionalities. Simultaneously, dialogism develops reflexive theorising of Emirati women’s learners who, although the largest group of learners in UAE federal universities, are often absent from the TEL scholarship discussing their learning. Dialogic analysis of the literature reveals the overdetermination of English as a second language, compared to other languages spoken in the UAE; backgrounding of gender issues; proliferation of neoliberal epistemologies and marketized learning. The inquiry concludes that the UAE-TEL genre, in the instance of the reviewed articles, reflects and constitutes gender discrepancies and other hyper-inequalities. Conversely, dialogism facilitates a theoretical awareness of who and what is ‘written-out’ and/or ‘written-in’ and to what effect.
1. Introduction

The Covid-19 global pandemic has been a catalyst for changing the way educators are now thinking about online course delivery in the Arabian Gulf (Hurley, 2020a). The unexpected transition to online classes was a matter of ‘needs must’ rather than an orchestrated theoretical, empirical or pedagogic strategy. But emergency delivery of online courses has not necessarily been inclusive of all learners. For example, in the United Arab Emirates (UAE) female nationals, known as ‘Emiratis,’ are indicative of Arab women learners for whom it is not appropriate to show face online, due to gendered customs (Hurley, 2020b). But the extent to which online learning, on platforms including Zoom, Adobe Connect or Blackboard, etc., is adequately catering to learners’ diverging needs is difficult to assess. This study addresses the limitations of broad-brush theorising to evoke learners and educators’ varying subjectivities within the multiplicities of transnationalism. Transnationalism refers to the crisscrossing of national cultures, languages and discourses, involving not only pluralism but also cultural difference (Massey et al., 1994). Transnationalism thus contests simplistic notions of context and locates sociocultural practices as always diverse, intertextual and dialogic (Petrilli, 2017).

To this end, the theoretical study develops a dialogic perspective of technology enhanced learning (TEL). Dialogism (Bakhtin, 1926; 1999) is defined as the pragmatically orientated theory of knowledge that seeks to grasp human behaviour through its relationship to language and provides a reflexive lens to delve into the TEL field. Dialogism in this study is aligned with the journal — Studies in Technology Enhanced Learning’s — aim to explore assumptions of prior scholarship, to reorientate, challenge and advance research in TEL (Bligh & Lee, 2020). Given the goal of capacity building in this journal’s special Middle East edition, the study takes Emirati women as a case to problematise monologic conceptions of TEL practices, practitioners and learners and to develop capacity for dialogism. The research question of the paper asks, to what extent could thinking with dialogism provide openings for conceptualising Emirati women’s TEL practices? To address the question, the article first introduces the relevance of dialogism for theorising the UAE transnational context. Second, it develops a thematic review of literature surrounding UAE-TEL scholarship. Third, the broad concept of dialogism is developed for reflexive theorisations of TEL.

2. UAE context and transnationalism

The Gulf Arab states include the Kingdom of Saudi Arabia; Bahrain; Oman; Kuwait; Qatar and the UAE. The UAE can be viewed as an educational microcosm indicative of the Gulf’s predominantly gender segregated federal higher education system. Other important characteristics that the UAE shares with its Gulf neighbouring states is its transnational quality and reliance on an imported workforce, curricula and discourses surrounding TEL. In the UAE, for example, foreign workers are 88.52% of the population and come from South Asia, South East Asia, the Middle East, Africa and Europe (GMI, 2021). This dependence on an imported workforce and practices locates the UAE as a highly transnational country operating within a complex enmeshment of varying discourses, citizens and non-citizens. Next, I discuss the concept of transnationalism and its relevance to dialogism.

While there are distinct similarities between Gulf nations, including political structure, religion and gender practices, there are specific differences. For example, the UAE has managed to diversify its economy, beyond oil and gas, into the tourism sector and as a transnational hub for commerce and trade (Kanna, 2011). Transnationalism a term that not only helps to define the multiple nationalities of the UAE, but it is also a scholarly research agenda and phenomenon grown out of the heightened interconnectivity between people and the receding technological, economic and social significance of boundaries among nation states (Massey et al., 1994). Nowicka (2020) suggests that connectivity and social context are equally important for transnationalism, but transnationalism cannot be reduced either to one or the other. Alternatively, transnationalism can be defined as the outcome of multiple belongings, practices and dispositions coming together and defining the hybridity of the UAE (Kanna et al., 2020; AlMutawa, 2020). Considering the increasing intersections between offline and online everyday practices, across borders, spatial and temporal locations, the ability to differentiate between transnational spaces can be hard to define (Massey et al., 1994). Furthermore, what happens online is always informed and embodied by positionality offline (Hurley, 2020a; Kaur-Gill & Dutta, 2017).

The lens of dialogism is sensitive to difference and nuances of UAE learners and educators’ positionality. A dialogic perspective of transnationalism could help to scrutinise higher education localities in more than one nation state and to illuminate those aspects of lives of migrants and citizens that could remain hidden when seen through the lens of normative or universal theorising (Nowicka, 2020). TEL
researchers could thus benefit from theoretical dialogism for considering these tricky questions of transcolonial context while clarifying the aspects of postcolonial and gendered sociocultural histories informing online course delivery and TEL practices. Next, I discuss the relevance of dialogism as a theoretical perspective.

Dialogism is associated with Bakhtin (1926; 1999), the Russian formalist and philosopher, although it was never a term that he used (Holquist, 2007). According to Bakhtin, dialogue involves a multiplicity of voices and series of perspectives that are always embodied and in process, while the mind and cognition occur in social interaction. Dialogism underpins all of Bakhtin’s works, in one form or another, and suggests that the meanings of dialogue are unique to the sender and recipient and based upon their personal understanding of the world, as influenced by their sociocultural background. Bakhtin’s dialogism therefore opens up space for scholars to conceive of difference in new ways while emphasising situated meanings.

While considering the positionality of Emirati women learners, dialogism indicates that transnationalism is nothing new. Bakhtin himself, born in 1895 in a small town outside Moscow, grew up in Vilinus and Odessa that were cities characterised by the heterogeneity of languages, including Russian, Lithuanian, Polish, Yiddish, Hebrew and German, as a consequence of nineteenth century transnationalism (Holquist, 2007). Transnationalism orientated Bakhtin to dialogism and it could offer nuanced insights into contemporary hyper-transnational practices, which include multiple belongings, languages, identities and a remixing of epistemologies that impact upon the TEL field.

Transnational-feminism also draws attention to the gap in scholarship concerning the experiences of women in the Global South (Dosekun, 2020). Scholars who use the term ‘Global South’ do so to refer not only to geographical locations outside of the West, but as a transnational, post-colonial and anticolonial political subjectivity and critique of contemporary capitalist globalisation (Mahler, 2017; 2018; Clarke, 2018). Increasingly, scholars note that while geopolitical relations remain important, growing gaps in wealth and power within countries must also be acknowledged. As Mahler (2018, 32) succinctly puts it, “there are Souths in the geographic North and Norths in the geographic South.” Thus, the notion of the Global South looks beyond specificities of geographies to identify the social agency of dominated groups.

A unique contribution of this study is the synthesis of dialogism with feminist-transnationalism, to consider gendered and ethnocentric assumptions of TEL literature. Addressing the invisible bias against female learners from the so-called Global South offers a rejection of gender as a fixed entity (Butler, 1993). Just as individuals experience and interact with cultural practices in varying ways, gender, race and ethnicity are also not essentialist categories. Emirati, Gulf and Arab women are often portrayed as oppressed, but their lives are highly varied, and they do not necessarily perceive themselves as passive or victims (Hurley, 2019a). But while TEL has played a crucial role in enabling women to participate in the public sphere, these forms of participation are largely commercial (Hurley, 2019b). Moreover, Gurumurthy and Chami (2017) caution that feminists need to develop historical and situated knowledge of how technologies routinely disempower women in varying ways. They note that prevailing discourse on women’s human rights must go beyond the online-offline binary, to discern gender oppression enmeshed with the hybrid contexts of techno-mediated practices and “the unfreedsoms wrought by digitalisation and networks.”

In the UAE context, secondary literature suggests the daily practices of Emirati nationals are often based on traditional gender-based roles although there are perceptible changes in women’s lifestyles resulting from access to higher education and enhanced freedom to choose marriage partners (Al Hourani, 2019). Emirati extended families are also starting to move apart while Emirati women are increasingly able to work outside the home. This is partly facilitated by the employment of transnational migrant domestic workers from Africa, South East Asia and South Asia, who work within the Emirati domestic sphere as housekeepers and nannies (Alteneiji, 2020). Social media also facilitates access to transnational networks and influences, but, despite the many changes, there are still significant tensions surrounding an Emirati’s women’s role in the public sphere (Hurley, 2019b). To consider these often contradictory and multiple belongings, dialogism and feminist-transnationalism are synthesised to develop a dialogic framework for the thematic review. This is discussed next.

3. Theoretical rationale

Before articulating the specific methods of the study, the rationale for dialogism as a conceptual framework is developed. In particular, this study draws on Bakhtin’s (1999) discussion of the problem of speech genres. This suggests that the structure, content and words of a text occur in a dynamic interplay of what is being said, how it is presented and to what purpose. At macro levels, articles in academic journals are not simply the works of individual researchers...
but also sociomaterial products. Macro sociocultural factors constitute the interplay of a text's thematic content, structure and purpose in meso terms. In turn, macro and meso elements influence style, register and vocabulary choice at micro levels. In the case of this study, this dialogic view of speech genres facilitates diachronic and synchronic insights into how the articles reviewed have been produced and circulated within the UAE transnational higher education context. Thus, it indicates that what gets published, read and circulated, as well as how it is written, voiced and interpreted, occurs within the historical parameters of given context, field and individuals. In the UAE context, this therefore involves hybrid transnational co-authoring.

In a similar vein, Bakhtin’s (1999) notion of genre correlates with Foucault’s definition of episteme (1966). An episteme refers to the conscious and/or unconscious structures and conventions organising the production and style of knowledge within a given time. However, according to Bakhtin (1999), the compositional aspects of discourse genres, are infinitely heterogenous and this perspective helps to envisage how TEL literature occurs within transnational practices of constant process, change and interpretation. Relevant to this study, is Bakhtin’s (1999) suggestion that discourses, articles and utterances are always the result of intertextual co-authoring that is shaped by the conditions in which they are produced and, simultaneously, by the goal of these structures.

At meso levels, dialogism indicates that the authors may be writing these articles about their immediate teaching experiences, for regional and/or international journals, but they are also influenced by the local, transnational and global contexts of the UAE and their countries of origin. At micro levels, it suggests that style of writing, choice of register, syntax and lexis operate within the given parameters of the particular speech genre of academic journals and institutions. Authors’ positionalities are individual but also determined by their role as employees, associated to particular institutions, and educational backgrounds.

Yet, reflexive positionality is not always made explicit within theoretical studies, even though theoretical analysis involves researcher subjectivity, operating from situated positions of race, gender, class and power (Hammond & Wellington, 2013). Various modes of reflexivity work simultaneously within dialogic theorising. These include reflexivity as recognition of self; as recognition of the research object; and as an interpretive account of knowledge (Pillow, 2003). To enunciate theoretical reflexivity, I next discuss the positioning of research within dialogism; the theoretical research object of this study; and self-reflexivity about my own researcher positionality.

In terms of reflexive positioning of research within dialogism, the term ‘dialogue’ itself is derived from two words in classical Greek, ‘dia’ meaning ‘through’ and ‘logos’ meaning ‘word’ or ‘discourse.’ Dialogism suggests inquiry can be developed at micro levels through dialogue, sentences and at word levels and also through emerging questions. As argued by Bakhtin (1986, 168), who is a major reference for dialogic pedagogy, “If an answer does not give rise to a new question from itself, it falls out of the dialogue.” This suggests that dialogic theorising is an ongoing process of questioning, series of interactions and a possible opening for different points of view rather than a transmission of facts.

Reflexivity concerning the research object, from a dialogic perspective, suggests that theorising cannot be considered as separate to or outside of practice (Freire, 1970; Giroux, 2014). Dialogism underpins the conceptual understanding that definitions, discussions and theorising of the UAE-TEL genre, which is the research object of this study, has tangible implications for shaping the field of research, scholarship and practice.

In relation to my own researcher positionality, as the author of this article, I come to this study as a feminist social media and TEL researcher, delivering undergraduate online courses in media and communication at a federal governmental women’s only university in Dubai. Originally from the United Kingdom, I have been working in the UAE for almost a decade and my experiences before this were in other countries in the Gulf and South East Asia. Having spent my professional career in diverse and non-Western contexts orientates me to the challenges and opportunities of dialogism and feminist transnationalism.

While not ignoring the conceptual challenges, dialogic theorising is an ethical move to consider the hybridity of sociocultural learning practices. Bakhtin (1986) suggests that all the diverse aspects of human activity involve dialogic language. This is because every discourse, as Bakhtin suggests, “is internally dialogic, adorned with polemic, filled with struggle; it is accompanied by a continual sideways glance” (1984, 32). Being mindful of the struggle for meaning, merely importing external theorisations of dialogic TEL pedagogy, into the UAE higher education context, would be antithetical to dialogism. This would not help to conceive of meaningful positionalities or what is obscured and foregrounded. Conversely, through situated reflexivity, dialogism can facilitate a multidirectional “sideways glance.” In this study, dialogism provides the framework to consider macro sociocultural aspects and transnationalism in the
UAE; the content and context of production and reception of TEL scholarship at meso levels; and the form and style of the articles in micro terms.

Considering the importance of asking questions within dialogic theorising, I therefore ask a number of reflexive questions about the theoretical assumptions of researcher positionality, the research object and the ethical values of research. Asking questions is crucial for developing dialogic perspectives of TEL. Dialogic questions provide reflexive openings to inquire how TEL occurs in feminist-transnational terms. These dialogic principles of intertextuality, self-reflexivity and questioning, inform the thematic dialogism of inquiry. Next, I discuss the study’s dialogic methods.

4. Dialogic inquiry

In terms of article selection, ten articles relating to higher education and TEL practices in the UAE were reviewed. While this may seem a relatively small number, dialogic analysis in this instance is concerned with depth rather than breadth. Furthermore, the dialogic inquiry considers articles from the UAE specifically, in adherence to dialogism’s orientation to a genres’ contextual features. The articles were written between 2011 – 2019 and were taken from a range of journals, books and academic data bases. The selection involved articles written in the last decade to convey a broad overview of contemporary features of TEL in the UAE context.

The articles are reviewed thematically, rather than chronologically, since the issues are not teleological but messy and overlapping. The selection was orientated to focus on the UAE higher education system, language issues and Emirati women learners. The articles were chosen via thematic word searches including, UAE pedagogy; TEL; mobile learning; e-learning; educational technology; multicultural learning; learning and TEL; Emirati/Arab women learners. Thematic analysis of the literature involved searching across the data set, of the ten UAE-TEL articles, to find repeated patterns of meaning. Braun and Clarke (2006) suggest that it is important that the theoretical position of a thematic analysis is made clear since any theoretical framework carries with it a number of assumptions about the data and what it represents.

The thematic categories of the dialogic framework consider macro-meso-micro factors of the texts; relationship to TEL; discussions of gender, dialogism and questions emerging from the inquiry. These thematic nodes are considered as discrete entities as well as in terms of their crosscutting integration, in order to organise the interpretative review of the texts. Intersecting scale, themes and correlates of the dialogic framework are outlined below (Figure I):

Figure 1. Dialogic framework
The dialogic framework (Figure I) positions cross-cutting and integral analytic themes. These thematic entities cut across macro-meso-micro aspects of the UAE-TEL literature. The analytic themes consider the articles’ sociocultural elements; discussion of gender issues; epistemologies and ontological views of educators and learners; languages, content, style and word choice. In terms of thematic reliability, it is acknowledged that the primary instrument of interpretation was the single author of the study. Although this could be considered a limitation of the study, I am self-reflexive that what is presented is derived from application of the dialogic instrument and the principle of co-construction of knowledge, via theoretical processes designed to be interpretative and performative (Denzin, 2001). Furthermore, through the theoretical insights of Bakhtin’s dialogism, it is argued that even the research of an individual operates within a social context and in terms of intertextual perspectives.

This contests the conventions of positivism, concerned with reliability or validity (Lather, 2016). Conversely, it adheres to qualitative research values of trustworthiness, narrative openness and interpretive analysis achieved through dialogic principles (Denzin & Lincoln, 2018). Each of the articles was explored via the dialogic framework and in relation to the central question of the study asking, to what extent could thinking with dialogism provide openings for conceptualising Emirati women’s TEL practices? To answer the question, and to develop further paths of questioning, the presentation of findings has been grouped according to the most pertinent thematic findings. These are presented next.

5. Findings

First, the findings are first presented as a thematic summary, providing broad mapping of the macro-meso-micro aspects of the articles.

As indicated in Table I, the nodes are further divided into the following categories:

1. sociocultural perspective
2. epistemologies and ontological views of learners and educators
3. style of writing
4. language(s)
5. context
6. gender

Second, these categories inform the presentation of the thematic findings as dialogic narrative. This offers varying interpretive perspectives of the articles reviewed. The themes revealed here, via the dialogic framework are, (T.1) sociocultural perspective; (T.2) gender issues; (T.3) neoliberal epistemologies; and (T.4) marketized learning ontologies. The qualitative style of presentation is in keeping with the values of dialogism and interweaves narrative, thematic and intertextual threads for the reader, who is also encouraged to carryout their own interpretation. It also informs the staging of a series of questions. This is presented next.

5.1 T.1: Sociocultural perspective

Analysis of sociocultural aspects of the articles revealed focus on English as a second language (ESL). For example, Learning and Teaching in Higher Education: Gulf Perspectives, a journal launched in 2004 in the UAE, emphasises the importance of ESL in relation to culture and technology (Palframan, 2019,1). Alongside imported curricula, technologies and educators, English language is the imported medium of instruction in higher education in the UAE (Hopkyns, 2014; 2017). In macro terms, uses of English in the Gulf are explained through links to the discovery of oil and rapidly changing economic and social conditions. Drawing on McArthur’s (2004) term ‘global English,’ conveys a sense of the way the language is linked (often negatively) to socio-economic globalisation. Hopkyns’ (2014, 1) says that global English in the UAE higher education context is a “double-edged sword” since, despite the opportunities it affords, there are concerns regarding the ‘negative effects’ on local language and culture.

Hopkyns (2014, 3) refers to a number of other scholars who have voiced concerns regarding the “linguistic flood” and suggests that recent UAE governmental policies of Emiratisation, to include more locals in the workforce and to raise the prestige of the Arabic language, are signs of notable resistance to the effects of global English. Ramifications for TEL in Hopkyns’ (2014) article imply uses of global English, occurring via educational management systems, social networking sites and learning applications, that are not neutral or devoid of a neo-colonial impact.

However, English and Arabic are only two of the numerous languages routinely spoken in the UAE. Other widely used languages include Farsi, Hindi, Urdu and Tagalog, along with Bengali, Malayalam, Tamil and Turkish, amongst others (Kanna, Renard & Vora, 2020). Although these languages continue to play an important and daily role in the UAE’s vernacular, they are rarely if ever mentioned in the TEL literature, further revealing contemporary neo-colonial hierarchies. Yet, the UAE linguistic landscape is complicated...
<table>
<thead>
<tr>
<th>Author</th>
<th>Year of pub.</th>
<th>Sociocultural perspective</th>
<th>Epistemologies and ontological views of learners and educators</th>
<th>Style of writing</th>
<th>Language(s)</th>
<th>Conception of context</th>
<th>Discussion of gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palfryman</td>
<td>2019</td>
<td>Constructivist</td>
<td>Intersecting with language and culture Constructivism</td>
<td>Interpretive</td>
<td>English</td>
<td>Multicultural</td>
<td>None</td>
</tr>
<tr>
<td>Hopkyns</td>
<td>2014</td>
<td>Dialogic</td>
<td>Constructivist Reflexive Transnational</td>
<td>Qualitative</td>
<td>Explicit</td>
<td>Transnational</td>
<td>None</td>
</tr>
<tr>
<td>Alzeer</td>
<td>2016, 2018</td>
<td>Dialogic</td>
<td>Spatially and culturally situated Reflexive Transnational</td>
<td>Qualitative</td>
<td>Explicit</td>
<td>Gendered</td>
<td>Explicit</td>
</tr>
<tr>
<td>Khelifa</td>
<td>2012</td>
<td>Dialogic</td>
<td>Culturally situated Reflexive Educational psychology</td>
<td>Qualitative</td>
<td>Explicit</td>
<td>Gendered</td>
<td>Explicit</td>
</tr>
<tr>
<td>Tu-baishat and Lansari</td>
<td>2011</td>
<td>Neoliberal</td>
<td>Banking model Technological determinism</td>
<td>Normative Quantitative Marketized</td>
<td>None Implicit - English</td>
<td>Multicultural</td>
<td>Implicit</td>
</tr>
<tr>
<td>Cavanaugh et al.</td>
<td>2012</td>
<td>Neoliberal</td>
<td>Technological determinism Positivist</td>
<td>Marketized</td>
<td>None Implicit - English</td>
<td>Ethnocentric</td>
<td>None</td>
</tr>
<tr>
<td>Hojeij and Hurley</td>
<td>2017</td>
<td>Constructivist</td>
<td>Constructivist</td>
<td>Marketized</td>
<td>Explicit</td>
<td>Limited</td>
<td>Limited</td>
</tr>
<tr>
<td>Ally</td>
<td>2013</td>
<td>Neoliberal</td>
<td>Fordist</td>
<td>Cultural learning styles</td>
<td>None Implicit - English</td>
<td>Essentialist</td>
<td>None</td>
</tr>
<tr>
<td>Santos</td>
<td>2017</td>
<td>Techn. determinist</td>
<td>Tech. solutionist</td>
<td>Marketized</td>
<td>None Implicit - English</td>
<td>Normative</td>
<td>None</td>
</tr>
</tbody>
</table>
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by the multiple number of languages being spoken while dialects of Arabic are diverse and often quite different from one another (Alteneiji, 2020).

Dialogism could explore the uses and functions of global English, but also other languages and dialects, to consider linguistic features of UAE-TEL. Language use and cultural identity in the UAE are sociocultural issues that are fraught with tension and complexities but acknowledging this helps to raise important questions about UAE-TEL practices. For example, other possible questions that became pertinent during this analysis were, what languages do Emirati women students use for TEL? How do they feel about these? When and where is it appropriate to use English, Arabic or other languages, or to code switch between them? How does the language of TEL impact cultural and individual identities in the UAE?

At meso levels, and topics of content, issues of gender are generally not foregrounded in the articles mentioned (Palfriman, 2019; Hopkyns, 2014). While, not every article can be expected to have an explicitly gendered focus, as a feminist transnational researcher I began to question the backgrounding of this important factor (Hurley, 2020a). From a dialogic perspective, backgrounding gender does not imply that gender issues are less significant than factors of English language learning, especially considering the fact that 80% of students at federal universities in the UAE are women (gbc.gov.ae; 2020a; 2020b). Conversely, it reveals tacit androcentric values of the UAE-TEL field. Furthermore, findings relating to ‘T2: Gender issues’ reveals that, across the articles, definitions of Emirati women’s identities are ‘fuzzy’ since there are so many elements intersecting with gender, including language and culture. I discuss some of these next.

5.2 T.2: Gender issues

Block (2007) asserts that conceptions of identity need to go beyond essentialist categories of race, ethnicity, age, linguistic identities and gender. This stance is pertinent to a dialogic perspective concerning the complexity of Emirati women learners’ identities discussed by Alzeer (2016). This article forges dialogic openings due to discussion of hybrid sociocultural and historical factors. Alzeer is an Arabic speaker and has self-reflexivity about her identity as an ‘insider/outsider’ in the UAE. What is also interesting about Alzeer’s (2018) article is detailed discussion of gendered learning spaces, which vary across cultures, historical and political periods. In terms of emerging questions, this could have important implications for considering Emirati women’s embodied experiences within offline spaces for engaging with online courses and sense of virtual presence (Hurley, 2020b; 2020a). This helps to raise questions about whether Emirati women learners’ online behaviours are extensions of offline gendered spatial navigations? Or are they enabling varying and new experiences of online spatiality?

Khelifa’s (2012), article also incorporates a strong dialogic framework and potentially non-essentialist understanding of gender in the UAE context. Khelifa’s English-Arabic bilingualism enables self-reflexivity and consideration of Emirati women learners who are actively negotiating the terrains of a globalised and transnational educational context, while picking and mixing varying cultural values according to a range of needs. She says her research indicates: “…the complexities of Emirati females’ identity development struggle. They exhibit an interest in Western values and lifestyles and at the same time place a lot of emphasis on their culture and religion” (Khelifa 2012, 28). She explains that, whilst some of the learners select Western values that can be reconciled with local values and beliefs, others are struggling to align these globalised forces: “Many young Emiratis are lately grappling with psychological problems and stress, with many engaging in juvenile delinquency and unorthodox behaviours.”

In relation to TEL, Khelifa’s (2012) research indicates that Emirati women students will be navigating TEL and online spaces in varying ways. Her study raises questions about how these practices are situated and not essentially bound by categories of gender or culture. Khelifa’s (2010) provides examples of how UAE female learners are not homogenous. Therefore, what enhances Emirati women’s technological learning in this context cannot be assumed as uniform but rather is dependent on the needs of the learner, including linguistic, cognitive and psychological aptitude, sociocultural background, etc. This is a highly dialogic perspective of TEL and aligns with Bakhtin’s (1999) view of culture as consisting of living language, speech acts and genres. However, this dialogism is in contrast to a number of the other articles reviewed that were underpinned by neoliberal epistemologies and ontologies. I discuss these next.

5.3 T.3: Neoliberal epistemologies

Across a number of articles, affordances of TEL were conceived in neoliberal terms. Neoliberalism is defined as the marketisation of services of the state, including education (Harvey, 2005; Means, 2018). The UAE and other Gulf Arab states’ drive to become knowledge economies can be understood as occurring as part of this effort to capitalise upon knowledge (Lightfoot, 2016). However, in the Gulf context, like elsewhere, neoliberalism manifests as a series
of imaginaries that varies according to context, gender and positionality (Brown, 2015). Furthermore, appropriation of neoliberal discourses is not uniformly available for all subjects since they occur in gendered, classed and racialised terms (Grewal & Kaplan, 2006).

Thinking transnationally means thinking of “scattered hegemonies,” that is, the lines and clusters of power that do not respect local, national, or regional borders but crisscross them and thereby come to constitute other kinds of boundaries and belongings (Dosekun, 2020; Grewal & Kaplan, 2006). A dialogic perspective indicates that transnational subjects might be responsive to more than one governing consensus, since power is not only the product of one location or imaginary community but an assemblage of different forms of power that work together. In the next section, I consider some of the neoliberal imaginaries underpinning the UAE-TEL articles.

Tubaishat and Lansari (2011), when considering e-learning in the UAE, proposed that TEL helps students to build confidence, develop autonomy and become more marketable. They recommend a focus on individualised learning and suggest that student success depends on a foundation of readiness rather than as a result of the state education system in preparing them for higher education. Tubaishat & Lansari (2011, 10) define TEL as “using new multimedia technologies and the Internet to improve the availability and quality of learning.” However, specifics of how new technologies improve learning are assumed rather than described and situated examples of TEL are less developed.

This echoes TEL literature in other contexts, whereby big promises for learning are made but within the “cruel optimism” of neoliberal imaginaries (Berlant, 2011; Macgilchrist, 2018). Technological solutionism is considered cruelly optimistic since effective learning is unlikely to occur when pedagogic strategies and logistics are vague (Means, 2018). Furthermore, learner difference is backgrounded, without explicit reference to varying cultural, gendered, linguistic or cognitive differences of learners. In the next section, I further discuss the micro aspects of the articles’ styles, informed by neoliberal epistemologies and constituting marketized ontologies of learners and educators.

5.4 T.4: Marketized learning ontologies

‘T4: Marketized learning ontologies’ was an emerging theme and evident across a number of the articles reviewed. Cavanaugh et al.’s (2012, 2), in their article iCelebrate teaching and learning: Sharing the iPad experience, define TEL as “ubiquitous” learning beyond the classroom, following a “flipped learning” model. At micro levels, dialogism focuses on specific words and style. In Cavanaugh et al.’s, discussion of the implementation of Apple iPads into higher education in the UAE, they suggest the technology enhances “new paradigms of learning.” These enhancements included “active and engaged learning… hands-on mathematics, note taking, media authoring, and using augmented reality.” These are facilitated through networking opportunities of social media, opportunities to develop portfolios and authoring opportunities for creating materials and e-books.

But these mentioned activities and tools are highly diverse while theorising of specific pedagogies is broad-brush, as are the variables concerning impacts of learners’ language(s), culture, ethnicity or gender. The absence of specific details results in vague description of learner ontologies, or ways of being, influencing their learning practices, uses of technology and responses to pedagogy. At word and sentence level, the article has a neoliberal rationale and ontology positioning ‘ideas’ and ‘people’ as assets to be commodified. For example, they state: “Transforming a national higher education culture requires intense focus in order to capitalize and build on the richness of ideas and people to realize our vision of optimising meaningful, relevant learning for all students” (Cavanaugh et al. 2012, 9).

Key words like “capitalize”, “richness” and “optimising” operate within the semantic field of business. This is a marketized style, enunciating a neoliberal learner ontology. However, it is also an example of cruel optimism suggesting that all social phenomena and actors are prospective commodities. Similarly, in an article that I co-authored, called ‘The triple flip: Using technology for the peer and self-editing of writing’ (Hojeij & Hurley, 2017), we offer some sweeping assumptions about TEL. In this article we claim:

“The process termed the Triple Flip was not seeking to replicate traditional pedagogies but aimed to harness technology to create new structures and training for peer and self-editing of writing. The learning process is not restricted to the classroom or bound within traditional hierarchies of teacher – student control and reception.”

This implies that TEL is developing new pedagogies but raises questions about why it is important to not “replicate traditional technologies”? Within the narrative of the “Triple Flip,” going beyond “hierarchies of teacher – student control” educators are also being ‘written-out’ of the learning equation and replaced by technologies. In other words, there is a tacit assumption that technology can take the place of the educator while learning itself, through a technolog-
ical-solutionist lens, becomes a black-box that obscures cognitive, linguistic and other sociocultural factors including gender. Consequently, ‘writing-out’ is the term coined in this dialogic study to refer to a more general obfuscating and silencing of learners and educators’ voices, perspectives and experiences of learning.

Dialogism, in addressing writing-out of learners and educators from the TEL narrative, could question why we need to go beyond the transmission of content from teachers to learners? Or, whether learners are equipped for learning technologies to move into the domestic sphere? Dialogism indicates that Hojeij and Hurley’s (2017) article is indicative of the recent TEL zeitgeist, eager to keep up and “harness” technology’s potential, while dazzled by the market and thrill of the ‘new.’ However, we are now beginning to realise how dehumanising costs of marketized TEL is subsuming the experiences of learners and educators. This is not to suggest that technologies do not have an important role to play in learning. Rather, just as educators are being written-out of the higher educational narrative, learners, who are struggling with online learning during the Covid-19 pandemic, have few channels or opportunities for their voices to be heard (Hurley, 2020a; 2020b).

In another article, Ally’s (2013) literature review positions the UAE higher education context as an emerging market. The UAE is compared to Brazil, South Korea, Thailand and India. Yet, while these countries can be defined as emerging economies, other similarities to the UAE are not developed through sociocultural or pedagogical analysis. Ally (2013) says that the increasing use of mobile technologies is connected to the countries’ realisation that IT literate citizens will give them an economic advantage. The enhancements of technology are thereby framed as economic, placing this article within a distinctly Fordist or neoliberal paradigm. In ontological terms, people and human activity are viewed as potential capital (Evans 1995; Harvey 2005).

Ally (2013, 16) also explains challenges facing learners in terms of cultural learning styles.

Yet, learning styles is an ambiguous concept that tends to be used in imprecise ways since what is being referred to are habits or preferences, rather than fixed cognitive behaviours. Ally proposes that each nation requires specific mobile learning materials and delivery systems for students with different learning styles: “…different cultures may favour certain ways to learn...Some cultures may prefer multimedia while other cultures may prefer text-based learning.” But, from a dialogic perspective, this vague description raises questions about what is meant by culture or which cultural learning style characterises the transnationally diverse UAE? Nevertheless, despite these limitations, Santos (2017) draws on Ally’s article in her review of mobile learning research within the UAE. She builds on it to develop a tech-centric review of TEL, in which economic factors overdetermine critical reflection of pedagogies and learners.

The dialogic framework here therefore establishes themes, topics and social actors being written-out of the UAE-TEL literature but also the intertextuality of articles constituting the genre. This illustrates the perpetuation and writing-in of certain pedagogic practices and logics, that are often economically driven. Next, I develop analytical discussion of the reviewed articles from a dialogic perspective.

6. Discussion

As indicated in the presentation of the findings, central themes emerging from the UAE-TEL literature include (T.1) sociocultural perspectives, foregrounding English as a second language in the UAE, while other languages are backgrounded; (T.2) gender issues are explicitly discussed in two articles but tacitly or not all in others; (T.3) neoliberal epistemologies; and (T.4) marketized learning rhetoric. These thematic findings indicate that the UAE-TEL literature is representative of some of the trends and tensions of TEL more generally.

The TEL field has been defined as economically driven, tech-centric and conflating e-learning, mobile learning, online learning, while also referencing equipment and infrastructure surrounding educational technology (Bligh, 2020; Macgilchrist, 2018; Means, 2018; Bligh & Lee, 2020). Subsequently, as a number of scholars suggest, it has become increasingly apparent that the term ‘enhancement,’ is being applied as a catch-all phrase but as a consequentialist value since what it means to technologically enhance or improve learning, for Emirati women learners for example, may differ widely to another group of students (Kirkwood & Price, 2014).

The dialogic framework offers analysis of how Ally (2013); Tubaishat and Lansari (2011); Cavanaugh et al., (2012) Santos (2017) and Hojeij and Hurley (2017), for example, offer neoliberal imaginaries of the UAE-TEL field, at macro-meso-micro levels, that sometimes literally write-out learners and educators from the learning narrative. However, the neoliberal visions conveyed in the articles are not necessarily representative or coherent with how the UAE government or local citizens, including Emirati women, position themselves. Kanna (2011) discusses the UAE’s home-
grown inflected neoliberalism and “flexible citizenships” to describe social actors’ shifting between different languages, scales and cultural worlds in constructing their identities. The dialogism of Emirati women learners is also emphasised in the articles of Alzeer (2016) and Khelifa (2012). This indicates that neoliberal imaginaries are inflected at meso-micro levels, by local meanings, dialects, discourses, histories and positionalities. It suggests how appropriations of neoliberalism mediate local ambiguities and differences pertaining to varying transnational sociocultural and gender identities.

Simultaneously, dialogism offers insights into how TEL scholarship is being defined as a marketized genre, through the neoliberal inflected style of blogs, websites and within the broad-brush episteme of business rhetoric. Transnational neoliberal imaginaries cross-fertilise with expatriate/migrant/non-citizen positionalities, to different extents and effects. UAE higher education is defined in corporate terms, as a consumer product and business endeavour to serve ‘clients.’ Pedagogic theories explicating the complexities of learning also intersect with a journalistic off-shoot of TEL, advancing bitesize, snackable content and formulaic solutions for teaching. From a dialogic perspective, this provides an example of how theory, scholarship and practice intersect rendering learning and teaching as an increasingly technologically driven product.

However, I suggest that in the UAE-TEL context, technological solutionism and the marketization of learning occurs, not only as the cruel optimism of inflected neoliberal imaginaries, but also through the precariousness of non-citizen positionalities for many social actors in the UAE. Accordingly, neoliberal imaginaries and technological solutionism coalesce as a convenient means of writing-out learners and educators. As counter point, dialogism builds capacity for integrative macro-meso-micro analysis, deeply ethical epistemologies, valuing difference and multiplicity of social actors’ voices, positionalities and alternative ontologies. Next, I consider dialogism’s possible reorientations of the TEL field.

7. Dialogic reorientations

The above discussion illustrates how the dialogic framework analysed the ten TEL articles at macro-meso-micro levels. Theoretical reorientation is an important aspect of dialogic inquiry since it develops new pathways and possibilities for disrupting taken for granted phenomena, or what and who are being written-out/written-in. In the case of this inquiry, the findings indicate the agility of the dialogic framework for demystifying, contesting and questioning the autonomy of neoliberal imaginaries, underpinning UAE-TEL. This is because dialogism is sensitive to the differences of UAE learners, teachers and researchers, who come from around the globe, occupying diverse and transnational positionalities. It indicates that they thus encounter neoliberalism’s scattered hegemonies, in varying ways, to different extents and with contrasting effects. Dialogic inquiry thus challenges the apparent homogeneity and stranglehold of neoliberalism and the writing-out of learners and educators from the TEL narrative. Next, I discuss these theoretical gains of dialogism in more detail.

First, dialogism is informed by diachronic and macro perspectives of the UAE-TEL’s broader economic and socio-cultural context. It considers how scholarship in the UAE, like the rest of the Gulf, operates within a particular version of neoliberalism, economic drivers of higher education and the precarious infrastructure of non-citizen educators and migrant workers. In the absence of citizen status, residents, or non-citizen educators, while motivated by economic survival, have limited means of resistance or vested interest to move against the dehumanising rhetoric of neoliberalism.

Dialogism also considers UAE-TEL scholarship at meso levels to consider content (who/what can be written/voiced) and at micro levels (how it is written/voiced) to analyse paragraphs, sentences and words. This helps to reveal neoliberalism’s persuasive logics articulating and constituting the distinctly marketized style across a number of the articles. The macro-meso-micro scales of dialogism articulate questions about this scholarship as well as guidelines for educators and researchers to develop reflective practice, beyond prescribed and packaged formulas of TEL pedagogies.

Second, dialogism is a highly intertextual perspective. In this study, it develops as a critical genre to expand insights into UAE higher education context, in terms of the intersections of historical discourses, multiple belongings and scattered hegemonies. Dialogism conveys that UAE-TEL scholarship is located within a transnational context, positioning social actors at the cross-roads of the so-called Global South and North. Dialogic inquiry reveals how this comes through in the TEL literature at tacit levels and in terms of what is foregrounded, omitted, recycled and/or refashioned. For example, while ESL is a major topic of discussion, within the UAE-TEL context, other languages and issues of gender are written-out. These omissions occur in relation to broader local and global systemic racial and gender inequalities. But current UAE-TEL literature, if silent on these matters becomes complicit in the perpetuation of neoliberal logics and hyper-inequalities. TEL scholarship could therefore also articulate the situated needs of students.

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and educators and the systemic inequalities surrounding us all. Dialogism highlights the politicised aspects of who, what, where, why and how we teach and learn as well as the impact that pedagogies have on current and future learners, learning, ways of being and knowing.

Third, dialogism is an ethical framework and sensitive to the diversity of TEL voices. It could look forward to emancipatory technological learning futures, by hinting at alternatives to neoliberalism, racial inequalities and androcentrism. A crucial step in overcoming neoliberal hyper-inequalities is to reveal that they are not inevitable (Grewal & Kaplan, 2006). Dialogism thus advocates alternatives to neoliberalism’s writing-out of learners and educators through marketized, implicitly ethnocentric and gendered TEL rhetoric. In the concluding section, I offer further comments, recommendations and limitations of the study.

8. Conclusion and recommendations

The central question of the study asks, to what extent could dialogism offer insights into Emirati women learners’ TEL practices? In answer to this question, the dialogic framework developed reflexive modes and scales for considering how TEL scholarship is orientated around certain themes. These included the prominence of English as a second language over other languages; backgrounding of gender issues; neoliberal epistemologies and marketized views of learning that are writing-out learners and educators.

Simultaneously, the inquiry revealed particular tensions surrounding the precarities of imported non-citizen expatriate educators and migrant groups, working within the UAE’s transnational arena. Devoid of citizen status, expatriate and/or migrants educators/workers supporting the higher education system have limited vocabularies, platforms or motivation to articulate alternatives to TEL platforms’ market driven formulas.

Conversely, dialogism is an ethical framework seeking to develop critical infrastructure. It articulates a variety of voices, questions and expansive theoretical conversations within UAE-TEL scholarship. Simultaneously, this provides openings to consider Emirati women learners’ experiences with online courses, content and practices. This is important since Emirati women are surprisingly absent from TEL literature in the UAE higher education context, despite populating 80% of federal universities.

The unique contribution of the study is the application of the novel macro-meso-micro dialogic framework for shifting modes of critical reflection. It provides a multidirectional review of UAE-TEL scholarship, as a speech genre, operating within the parameters of its given speech conditions. Dialogism unpicks the knotted and complex issues interwoven within the UAE’s neoliberal but constantly shifting transnational context. Dialogism therefore enunciates the potential diversity, transnationalism and multilingualism of TEL in the UAE.

The dialogic framework offers insights into the growing body of TEL literature in the UAE context as indicative of the exponential economic growth of the region, as well as the significant financial and academic investments into TEL research. Dialogism reveals that the content and style of texts are underpinned by the constraints of the genres and epistemes within which they operate. Not surprisingly, a common stance in the literature is that the UAE higher education context is a market and learners are consumers. The dehumanising rhetoric of the market is also theorised as contributing to the writing-out of learners and educators. Yet, dialogism, through commitment to questioning, holds TEL theorists and academics working in the UAE as also accountable. Like academics elsewhere, we make pragmatic choices about whether our research is complicit or challenges inequalities. Dialogism asks for self-reflexivity on these issues as well as the articulation of learners’ needs and perspectives.

In terms of limitations, since it is a theoretical study, it does not fully incorporate the voices of Emirati women learners. This is ironic considering it is a paper orientated to dialogism. But theorising also occurs through scholarly conversations and the writing-in of others. In the spirit of Bakhtin’s dialogism (1999), it is argued that all research operates within intertextual perspectives and as co-authoring.

It is hoped that dialogism will path the way for future theoretical, empirical and transnational TEL studies in the UAE context. TEL scholarship needs to explore more deeply how learners feel, experience and engage with situated contradictions, imported curricula, language, technologies and educators, to make learning their own. Going beyond neoliberal versions of TEL is also very much an unfinished project and in the spirit of the Bakhtinian theory (1984) it is “unfinalizeable.”

Future studies could develop alternative narratives to the neoliberal versions of UAE-TEL scholarship and elsewhere. Scholars interested in dialogism might consider learner positionalities, conception of the research object.
and researcher self-reflexivity in relation to speech genres. The sheer hybridity of the UAE’s multicultural, transnational and rapid technological change makes for a fascinating and important research object, providing insights generalisable to other Gulf nations and beyond. Finally, reorientating TEL scholarship in the UAE, in dialogic terms, is not only capacity building but a politicised move to question who and what are written-out while advocating the writing-in of learners and educators’ pedagogic practices and experiences.

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Instructional design is the catalyst

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Abstract
As educators have quickly adopted remote learning amid the Covid-19 pandemic, they have faced challenges of engagement, assessment, integrating 21st century skills, mastering new technology tools, and adapting face-to-face learning experiences for the online classroom, among others. Professional development in instructional design and the input of instructional designers could support educators in all of these areas.

English language teachers are now called upon to fundamentally change the learning experience for two reasons. First, to integrate 21st century skills (Trilling and Fadel, 2009) into curricula and assessments, and second, in response to the pandemic, to create online learning experiences.

For years, educators have discussed the importance of 21st century skills learning experiences, but few institutions have successfully done so. Part of the challenge is that creating a lesson that gives learners a chance to develop skills such as leadership, digital literacy, and global citizenship is a more complicated endeavour than the traditional English lesson. Furthermore, assessing the extent to which a person has developed an intangible skill such as creativity is a particular challenge.
Furthermore, there often isn’t a straightforward translation from a face-to-face lesson or activity to an online one. There’s no formula, no simple conversion method. This means a complete reconsideration of the learning experience, and that requires input, ideas, and inspiration.

This paper will examine how instructional design can be a catalyst for the development of more dynamic, engaging learning experiences that will better prepare students for academic and professional life.

1. Introduction

In my experience as a learning consultant to Middle East educators and education leaders, the most pressing questions they have asked, both during 2020 emergency remote teaching (ERT) and even before, focused on engagement, assessment, 21st century skills, and instructional technology.

In my daily work, I talk to education leaders and instructors (often one in the same) in the UAE, Kuwait, Qatar, Saudi Arabia, Oman, Bahrain, and other countries in the region. Conversations take place in meetings with individuals, program leaders, and groups of faculty from the same institution as well as large groups of faculty from multiple institutions. These conversations often center on resources, training for teachers on how to use course resources, and professional development to improve the standard of instruction.

Even before the pandemic struck, teachers and leaders have expressed concerns about assessment, engagement, and integration of 21st century skills into curricula. The pandemic highlighted the fact that a new set of skills and approaches are needed to overcome both longstanding and new challenges.

Instructional design skills can be the catalyst that helps educators overcome challenges in assessment, 21st century skills integration, engagement, and appropriate use of technology. So much so that, according to the 2020 Educause Horizon Report, instructional designers are taking a more central role in course design, shifting from a source of support to a critical part of the course and learning experience development process.

There are many definitions and opinions on what instructional design is and what instructional designers do, but for this paper, we will use “… the process by which learning products and experiences are designed, developed, and delivered. These learning products include online courses, instructional manuals, video tutorials, learning simulations …” (Instructional Design Central, 2021). Instructional designers create those products and experiences.

Institutions that have staffed, funded, supported teaching and learning centers can offer faculty and course developers the support of an instructional designer (or an instructional design team) in creating courses and programs and sessions that are appealing and engaging. The instructor-instructional designer collaboration can mean that synchronous and asynchronous learning modes are optimized for achievement of course learning outcomes. While both the instructional designer and faculty members can be experts on the learning outcomes for a course, the instructional designer understands how to design a course and has command of wide variety of instructional technology tools, and the faculty member is an expert on the course content. Together they can create assessments and rigorous learning experiences such as learning portfolios, creative projects such as videos or infographics, and community-involved activities.

Those are the experiences that support the development of 21st century skills (Trilling and Fadel, 2009), most notably communication, collaboration, creativity, and communication, leadership, and digital literacy. The Partnership for 21st Century Learning, also called P21 (P21 Framework Definitions, 2015), describes them as “the skills, knowledge and expertise students must master to succeed in work and life; it is a blend of content knowledge, specific skills, expertise and literacies.”

2. Assessment

Before the pandemic, administrators noted that their teaching teams were not as well versed as they would like in assessment design. Sometimes teachers worried that they were being asked, or even required, to do something extremely important for which they did not have training or skills. During the pandemic, the previous challenges remained constant with the added concern of academic integrity in online exams.

Many would agree that it is time-consuming to create an original traditional test with fixed correct answers. Additionally, traditional, objective multiple-choice or short-answer language tests do not provide data on whether, or to what extent, students are developing the skills of productivity, leadership, creativity, digital literacy, and other 21st century skills. For this reason, and perhaps many others, it is necessary to rethink assessment. If educators want to know whether students can describe an event in the past,
it might be helpful to ask them to choose the past tense form of a verb when given four options in a multiple choice question. However, this might only tell us if the student can recognize the past tense. Alternatively, instructors could ask a student to recount a past experience of their own, and the response could be marked according to a rubric that is based on course learning outcomes. This would better inform a teacher about whether a student is able to produce target language. Instructional design expertise can support the process of creating the prompt, setting up a process of submitting the work, grading the work, and using the technology needed to carry out those steps.

3. Engagement

In 2019 and earlier, a few administrators said the biggest engagement challenge they observed was simply teachers delivering boring classes, and teachers lamented that students were only interested in looking at their phones. Once the pandemic forced a switch to remote learning, many teachers from around the Middle East expressed concern that students were logging on for class but turning cameras and mics off and walking away.

Project-based learning techniques help teachers engage students with a variety of activities but also create activities that provide data on student participation. For example, assessment-for-learning and game-based-learning activities can keep students engaged and provide the educators with data on whether the learner is actively working during a synchronous online session.

Additionally, the widespread 2020 shift to ERL often meant that two hours of face-to-face classroom instruction meant two hours of online instruction, with students expected to spend several hours per day at a computer screen. This compliance-driven approach does not allow educators to optimize asynchronous assignments and activities, such as discussion threads and creative projects, to ease the pressure of many consecutive hours of screen time.

4. 21st Century Skills

Discussion of 21st century skills and what they are has been widespread in recent decades. However, schools and universities find it difficult to integrate them into their curricula (Vista, Kim, & Care, 2018).

The intangible, abstract nature of 21st century skills makes them more challenging to assess (Vista et al., 2018), and therefore, many institutions are reluctant to build them into the curriculum.

Furthermore, the necessity for significant change to the daily learning experience can also make 21st century skills more challenging to transform from idea to reality. For institutions that have taught and assessed the same way for many years, being told that they have to include projects and interactive experiences in a curriculum based largely on exams can come as a shock.

Educators who themselves are idea-fluent problem solvers with a command of instructional technology and design can navigate these changes, and many often advocate for them. However, many teachers do not have those skills, or do not have them to the required extent to effect change. However, if we look to professional development as a possible remedy, we find that many institutions tend to offer individual, unconnected sessions that are not in response to stakeholder needs, but simply what is available, meaning that many current approaches to professional development do not meet the need for instructional design skills.

5. Instructional design

The pandemic shift to ERL has highlighted the need for a new approach to engagement, assessment, and 21st century skills. That approach includes projects and assignments that turn away from, but do not entirely forsake, traditional gap fill and multiple-choice questions and toward work that requires students to formulate original responses, often in multiple stages. Such assessments will require learning experiences in line with this approach to assessment. However, to make these new approaches realities, teachers themselves will have to apply the 21st century skills of creativity, idea fluency, collaboration, and digital literacy. Institutions can support this evolution by creating or expanding instructional design support, either through teaching and learning centers, or embedding instructional designers within programs or discipline areas, or through a well-considered program of professional development in instructional design.

Instructional design professionals can help educators maximize the advantages of different modes of course delivery. For example, some educators saw successes with online teaching during the pandemic with students who felt more comfortable typing into a chat than speaking in front of a group in a face-to-face classroom. Other learners might feel more comfortable in small breakout room conversations (Mehta, 2020). Furthermore, online experiences can offer more opportunities for learners of different levels to work at
their own pace, and teachers might also be able to personalize the experience for the learner (Graham, 2015). These advantages of online instruction can be built into a course, and their advantages optimized.

Although it is beneficial when institutions can support educators with instructional designers and teaching and learning centers, educators themselves need instructional design skills to build and execute evolving approaches to assessment and the daily learning experience.

6. Professional development

To do this, institutions can accept responsibility for cultivating the teachers they need. For many institutions, the pandemic has shown that traditional approaches to professional development left many teachers and institutions unprepared or underprepared to deliver courses online. Furthermore, even once the initial emergency shift to remote learning was over and a new term began in the fall, despite some time for adjustment and preparation, many institutions continued delivering courses built for a face-to-face teaching environment online, without taking advantage of the benefits of technology and asynchronous learning activities.

A teaching team informed about available technology, and able to exploit the advantages of synchronous, asynchronous, and face-to-face experiences, would be able to support the transition from traditional face-to-face courses delivered online to flexible courses designed to meet challenges of the pandemic, and recover from it.

However, one of the most challenging obstacles to a continuous professional development solution that can build that agile teaching team is a focus on compliance over needs, choice, and even professional learning itself (The Boston Consulting Group, 2015). I have encountered leaders who appear to view professional development as an administrative task and who request two, four, or six hours of workshops without considering their teaching teams’ professional development needs or interests. The idea that offering a number of hours of workshops is a simply task to be completed has become an obstacle to meaningful, relevant professional development, perhaps leaving teachers with the idea that professional development itself is not a useful endeavor (The Boston Consulting Group, 2015).

While technology has increased teachers’ need for PD, it also increases their access to it, and the variety educators can choose from. Workshops are a great way for teachers to access new ideas and exchange ideas. However, if institutions recognized courses from online professional development platforms, peer observations, massive open online courses (MOOCS), communities of practice, and other less-conventional forms of professional development, the access to a wider variety of topics would mean a greater opportunity to access the most relevant PD for teachers’ needs.

Transforming professional development from an ad-hoc task to a relevant, varied, and enjoyable path to ensuring quality learning experiences is central to success in current pandemic conditions and in the future.

7. Conclusion

A thorough PD needs analysis and sound professional development program that includes instructional design skills can empower leaders to create the teaching team they, and their students, need to create learning experiences that work face-to-face, remotely, or as a hybrid of the two. Empowered, informed teachers are the most effective means to ensuring a continuously improving standard of instruction that can weather the challenges of today and tomorrow.

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Covid Leadership: Increasing capability across a changing digital landscape

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Abstract

Educational leadership has always been closely linked to change and improvement. As Covid-19 quarantine measures brought about sudden changes, the need for leaders to guide and maintain effective instructional practice was pivotal in the success or failure of schools’ online learning provision. This paper details one school’s approach to managing Continuous Professional Development (CPD) that was focused on developing online teaching competency. It discusses the relevance of that experience in planning for a longer-term provision. It warns of the danger of overgeneralizing lessons learned from solutions which were planned quickly during emergency circumstances and applying that to a very different context, whilst highlighting the need for continuous monitoring and evaluation.

1. Introduction

As pedagogy has developed over the years and legislation has brought about change after change, the education community has started to take for granted the crucial place that Continuous Professional Development (CPD) occupies in the teacher’s role. In the UK, being responsible for one’s own professional development is included in the teaching standards (DfE, 2016b) and the Department of Education
make clear the role that school leaders have in making CPD both relevant for teachers and focused on having an impact on student progression (DfE, 2016a). The global accreditation body Cognia list one of the standards that institutions are judged by as the leadership’s adherence to improving professional practice across the organisation (AdvancED, 2020).

Increasing capability is a core part of any educational leader's role and as needs arise and contexts change, needs-based CPD also shifts in direction. As school closures in the Kingdom of Saudi Arabia took teaching and learning from the classroom to the home literally overnight, a sudden need to increase capability in the new paradigm was identified. The competent leaders were those that kept delivering this core part of their role through unchartered waters.

This commentary presents a case study of one K-12 international school in KSA (which is led by the author of this paper) that successfully switched from regular face-to-face teaching to full-time online schooling. Rather than discussing the issues related to technical infrastructure and sourcing appropriate learning resources, the case study explores how the school leadership supported teacher competency growth. As the Kindergarten section of this school implemented a purely asynchronous model and this study is mainly concerned with synchronous study, the grade levels discussed are from grades one through to twelve. Although segregated, with boys and girls sections, the senior management for the school is shared.

This paper offers an opportunity to reflect on how effectively leadership can rapidly respond to novel situations and suggests what needs to be considered when those situations persist long-term. Solutions developed quickly need not be kept just because they work in the moment. Instead, there could be a need to redesign an entire program or procedure in order to give it a stronger theoretical base.

2. Identifying the hidden stars

Many schools practicing a distributed leadership model have already seen the impact that such an approach can have on their professional learning communities (Jambo & Hongde, 2020). A top-down management approach is limited because no senior leader can be an expert in all things and so utilising the expertise of the entire team can unlock a lot of hidden capability. In the context of Covid-19 and the sudden emergency measures that followed, not only did very few senior leaders have significant experience in online pedagogy but there was also very little time to conduct extensive research in the field before planning accordingly. In the school in this study, early discussions between the leadership and the teaching team revealed that many of the teachers had been teaching online for several years. They had experience with online classroom tools, supplementary online resources and the teaching strategies that were appropriate for the new medium. These in-house experts played a crucial role in guiding the development of plans and in mentoring less experienced team members.

3. Professional development

Informal discussions with school leaders and professionals involved in teacher development in the region brought up some heavy criticism regarding the focus of CPD during the first few weeks of lockdown. They highlighted the fact that most of the questions raised in workshops revealed that educators were primarily concerned with how to deal with the technical aspects of using and selecting the right online tools rather than enquiring about what pedagogy is needed specifically for online learning. These criticisms, whilst factual are not necessarily as negative as they are portrayed by those seeking deeper educational discussions on online learning. Post crisis, many months after the online switch, then more focus should be placed on pedagogy but at the onset of lockdown, technical competency was quite rightfully a top priority. One must learn how to use a tool effectively in the technical sense before moving on to applying it appropriately in different situations. To use an offline analogy, one cannot teach a student how to write a persuasive argument before that same student has been taught how to hold a pen.

Despite this, opportunities were found to develop teaching methodology along with technical competence by engaging teachers in varied professional development activities. Using Kelly (2006) as a basis, teachers at the school were historically encouraged to take advantage of approximately 20 types of CPD activities, however for the Covid-19 online shift the CPD focused on a handful of activities which could be divided into three major stages.

3.1 Stage One: Induction and orientation

Programs of significant change require a robust orientation in order to align the entire team to the same vision (Fullan & Quinn, 2015). It also gets everyone speaking the same language. Although an LMS had been used for the best part of a decade and some teachers had already been delivering online lessons, most teachers were unfamiliar with terms like ‘asynchronous’, ‘synchronous’, ‘flipped’ and ‘blended’ learning. Even some teachers that had familiarity

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with the words needed clarification of the correct definition (a significant example being that when one HOD was asked how they implemented flipped learning, the response was that students are given the opportunity to be the teacher). With two days of preparation, the main objective was to get all teachers to the technical competency required to go live on time and in full. The large jump in parental satisfaction scores experienced after the switch could be attributed to the smoothness of the change.

3.2 Stage Two: Workshops and seminars

Stage two could be considered the directly taught element of the CPD program. The expertise for such sessions were not found in abundance within the institution itself and with all teachers engaged in full-time teaching timetables, other sources were needed. Being forced to move all training online meant that training providers were able to offer more workshops to larger groups of participants than has ever been seen in the past. In the K-12 sector, most of the training available was arranged and facilitated by textbook publishers and distributors, mostly because it was freely available and at the end of the year the option of paying for courses not previously budgeted for during in a time of financial uncertainty was not possible.

The leadership team encouraged all of the teachers to attend these workshops and kept them informed about what was available. A minimum number of training hours was not mandated nor was specific training selected and signed to specific individuals. This was due to the pressures that all staff had in managing the new demands on workload whilst teaching from home. Even without any specified engagement amount, a review of the personal CPD records of all staff found that all teachers had voluntary taken part in at least three online seminars. Some of the most attended seminars were “How to use the Pearson portal”, “21st Century Skills”, and “Monitoring Progress During Distance Learning.” These sessions tended to be a one to two hour online seminars with the trainer. The trainers aimed to introduce practical tools and methods during the session that the teachers could use later on as well as lecturing on the topic.

At the end of every CPD session, a four-question survey was completed by every attendee. Attendees were asked:

1. To what extent do you feel that you were in need of this CPD program?
2. To what extent did you benefit from this CPD program?
3. How would you evaluate the content relevance of this CPD program?
4. How would you evaluate the effectiveness of how this CPD program was delivered?

The seminars scored quite lowly, and the qualitative extra comments provided by the attendees showed that although the sessions were beneficial, they did not go to the depth that was alluded to by the title of the training topic. Whereas the topic title would suggest that deep learning on online pedagogy would take place, the sessions were often a presentation of useful tools. Comments resembling “The Kahoot app was useful, I will try to implement it in my lessons” were common. As mentioned earlier, this tendency to introduce tools and develop technical competency in such an early stage of online learning is not necessarily a negative point.

3.3 Stage Three: Observation and mentoring

During the course of a normal semester, teachers are observed by the academic leadership in both extended formal observations and less formal drop-in sessions. The leadership of the school were particularly concerned with transferring those monitoring procedures online from the first day of synchronous online learning. This was seen as important in order to ensure that leadership had a clear and accurate view of the teaching faculty’s practice in the online classroom.

Through informal discussions with the team and the aforementioned online lesson observations carried out by academic leaders, highly capable online teachers were identified as candidates who could share good practice with other teaching staff. As mentoring is a common practice for supporting new teachers (Kemmis, Heikkinen, Fransson, Aspfors, & Edwards-Groves, 2014) and the new context of online learning put many in the same situation as a new teacher, mentoring was chosen as the most appropriate method to support less capable teachers. Six mentors from various departments were selected, with up to five colleagues assigned to each mentor. The mentoring sessions operated on a two-week cycle where mentors observed the mentored teachers and mentors were observed themselves. The underlying objective was to focus on key development areas with the help of a more-experienced colleague.

Whilst mentoring was effective in sharing good practice, a major obstacle was the mindset of some mentored teachers. Covid-19 made almost everyone a beginner. All of a sudden, a teacher with 20 years of in-class experience was taking the role of the inexperienced learner and a sense of pride can make one unwilling to view new techniques with an open mind. In the Middle East where seniority of years
is well respected, younger mentors were also reluctant to highlight points of development for their elder colleagues. However, it was necessary to do so as whereas department heads would normally take the lead on constructive lesson evaluation, there was limited time to upskill them to be able to drive quality in online teaching.

After the teaching faculty had attended even more workshops and training sessions, the program of observations was expanded to incorporate peer observation as well. However, in a highly face-saving culture, it was a slow process to move observers away from making general statements of praise and to focus on helping each other to develop. This was tackled by changing the form used for peer observation slightly from what was used for mentor observation. Whereas the mentoring form had the headings of “What stood out from the observation?” and “Strategies to consider for next time”, the peer observation form provided a positive and constructive structure with the headings “Two strong practices observed in this lesson” and “Two areas for improvement.”

### 4. Measuring impact

Even when CPD does not involve significant financial investment, it can involve a considerable investment of time by the trainer, the trainee and those organizing the provision. In any organization where efficiency is important, measuring the return on that investment is critical to guide future planning and make any necessary modifications. Traditionally, training impact in the school was measured in a number of ways. These methods can be theoretical (by summative written test on the content) or practical (observing the trained skill in classroom visits), output focused (on the teacher’s performance) or outcome focused (on the students’ performance). Workshops in particular are always followed up with some form of trainee evaluation. Some workshops may contain an assessment within the workshop itself. In the past, the school used a summative assessment of all training taken in the form of an end of year training impact test. These methods are acceptable, but they do not measure what was referred to earlier as “return on investment”.

More practical measurements can involve observing student outcomes but that too may also have other influences (such as aptitude of the student and parental support) and are not solely affected by CPD. Observing the teacher’s performance within a pre-determined framework can inhibit the teacher’s creativity as he/she will only exhibit the sanctioned practices of that framework (Ball, 2003). This formed the basis of the rationale for normally using a lesson observation framework that looks at student engagement and behavior in the (face-to-face) classroom.

#### 4.1 Selecting, designing, and implementing a suitable observation tool

Two main observation tools were used by the school’s academic leaders in order to evaluate teaching. A teacher-focused observation that was aligned to particular KPIs related to delivery and a student-focused observation that was initially designed to assess the entire learning environment. The latter was the tool used by the school’s accrediting body, Cognia called eleot (Advanced Education, 2020). Whilst a student-focused observation would be a good measure of whether the teaching strategies adopted were effective in promoting student engagement and interaction, it is very difficult to implement in a synchronous online classroom where a large number of students may be not heard and most students are not physically seen. The guidance for the “Active Learning Environment” specifically asks observers to look and listen for student discussions and observe group work (AdvancED, 2013). Although this can be achieved with the use of online breakout rooms to a certain extent, expecting a teacher to arrange up to ten separate breakout rooms for paired discussion and monitor them is highly impractical. This makes certain elements of the eleot unsuitable for the online classroom. The fact that none of the existing tools of the school were designed to measure any strategies specific to online learning also made them all inadequate to measure the impact of a very focused online teacher training program. This meant that a new tool had to be designed to observe how teachers were implementing the new strategies that was expected from them.

Given the stage of professional development that most teachers were at in the beginning of online teaching and the heavy technical competency focus of most of the offered training workshops, observation criteria were selected that focus on competent use of online classroom tools and maximizing student interaction and engagement. The criteria selected are listed below.

All of the criteria were marked as either being observed, observed partially or highly evident. Notably, the final criterion of using the chatbox would normally be covered by the criterion of student participation, however it was extracted in order to highlight its importance so that teachers could focus on it.
### Table 1. Observation Criteria

<table>
<thead>
<tr>
<th>Observation Criteria</th>
<th>Expected teacher/student practice</th>
</tr>
</thead>
</table>
| Uses classroom time with minimal disruption               | • Lesson starts/ends on time  
• Technical issues are dealt with promptly  
• Resources are ready                                                                                                                                                                                                                                                                                         |
| Transitions between activities smoothly                   | • Transitions are logical  
• There is no significant delay when switching activities  
• Students receive clear instructions about what to do next                                                                                                                                                                                                                                                                                                         |
| Addresses behavioral issues appropriately                  | • Negative behavior is addressed without reducing learning time significantly  
• Students are reminded of behavior expectations when appropriate                                                                                                                                                                                                                                                                                                      |
| Uses digital platform tools effectively                   | • Camera is used  
• Mute/Raise hand tools are used  
• Learning resources are shared on screen along with tools for interaction                                                                                                                                                                                                                                                                                        |
| Learning objectives are clear                             | • Learning objective is clear from the beginning of the lesson                                                                                                                                                                                                                                                                                                      |
| Explanation is appropriate to age and stage               | • Explanation is not too long  
• Visual resources are used to support the explanation stage  
• Explanation is not used where flipped learning would be more effective                                                                                                                                                                                                                                                                                        |
| Learning objectives are effectively addressed in the lesson | • All activities are aligned to the learning objectives  
• All learners are assessed against learning objectives                                                                                                                                                                                                                                                                                                               |
| Teacher links to prior learning                           | • Teacher uses assessment of prior learning prior to commencing new learning  
• Planning is adapted according to learner needs                                                                                                                                                                                                                                                                                                                   |
| Teacher makes real-life connections                       | • Relevance of topic is discussed with the students                                                                                                                                                                                                                                                                                                                  |
| Individual student work is directed or referred to        | • Sufficient time is allocated for student activity  
• Homework/project work is reviewed and discussed                                                                                                                                                                                                                                                                                                                    |
| Content is engaging and appropriate                       | • PowerPoint/Learning resources are designed well with appropriate language  
• Interactive learning tools are used                                                                                                                                                                                                                                                                                                                        |
| All students have the chance to respond and participate   | • Selection system is implemented so that all students interact  
• Interactive tools are used to get 100% interaction from students                                                                                                                                                                                                                                                                                                  |
| Supports individuals that need help                       | • Student understanding is continuously assessed  
• Students with difficulty are supported                                                                                                                                                                                                                                                                                                                         |
| Chatbox is used for meaningful participation              | • Chatbox is used as a tool for all students to respond to the teacher (without relying on the one student at a time using the audio)                                                                                                                                                                                                                     |
Overall, a total of 71 observations were carried out in the first two weeks of online learning across 12 grade levels with up to four classes per grade. Observations were conducted by department heads and academic supervisors, and all departments were observed. Smooth transitions between activities and teachers using the digital tools effectively were identified as areas of particular strength across the school. Supporting students that required extra assistance and making real-life links was a general weakness. These areas were highlighted for focus in the stage three mentor observations. More specific departmental weaknesses were analyzed for HODs to address with their teams. For instance, the science department in boys’ classes were particularly weak at using the chatbox for student interaction.

The strengths identified in the lesson observations loosely aligned with the perception of students’ parents. 149 parents were surveyed about their satisfaction with the online learning program. They responded on a 5-point Likert scale with an overwhelming majority (70%) being satisfied or highly satisfied with the lesson explanation and a lesser majority satisfied or highly satisfied with the level of teacher-student interaction (67%). However, these opinions may be very lenient as this school was able to start online learning a week before many schools in the region, using a reliable system. Many of the local national curriculum schools started a week later and experienced system crashes in their first week. The very fact that their children were in classes whilst others were not may have caused a higher satisfaction overall.

The tool was effective in assessing those that were comfortable in the online classroom and those that were not but was not so strong in measuring the variations between that. This could be due to the fact that only a three-point scale was used for each criterion and that there was no detailed rubric adopted. It was able to show improvement over time but there is little evidence to show that that improvement was a result of CPD or whether it was just natural improvement resulting from experience.

4.2 Limitations of the tool

Designed in a hurry, there were many limitations with the observation tool that was developed. Knowing these limitations should help with the design of a more reliable and accurate tool. The observation criteria were determined by selecting criteria from the existing tools of the school which were still relevant for online classes and expanding those to include criteria on using tools to engage, support and manage students. Due to time constraints, there was no reference to research on best practices in online teaching.

The research in that area was also limited and not immediately accessible at the time of designing the tool. The growing body of research in this area means that far more robust tools can be designed in the near future. A further limitation in the tool design is that it went through no process of piloting and calibration by multiple observers. With very large banks of recorded lessons being created, there is now a great opportunity to test any observation tool thoroughly before adoption. The last limitation was not in the tool itself but in the expertise of the observers. By default, heads of department were responsible for observing the observations of their team and offering comments for improvement. But there was little time to grow the capacity of that supervision team which may have resulted in inconsistent observations from department to department.

5. Next steps

Planning for a new paradigm of online learning requires appropriate framing of past experiences. Everything done in early 2020 as a result of sudden quarantine was done in a rush, planned and executed by people trying their best with little specific experience in online learning. Research into purely online learning was limited. Plans were developed based on little prior knowledge or experience of best practices. In schools, although digital learning had been practiced to a certain extent, a full online provision had never been explored except in a few homeschooling settings. An example of these constraints can be seen in the online teaching platform that was selected for the school of this study. With only two days to both plan and train the team to open online, selecting a simple tool that could be grasped easily by all was a top priority. With a whole summer’s induction period to get teachers prepared for 2020/21, those same learning concerns could result in not selecting the same simple tool again, instead investing more time in training teachers to use a tool that offers more safety and security for young learners.

After a summer of engaging with research in online learning, many have been able to adopt more sophisticated approaches in their planning. For this school, this was adopting a flipped learning strategy. Essentially, the gap of reduced sessions will be covered by moving the explanation portion of the lesson into an asynchronous session and using the synchronous time to increase interaction with the teacher (Smith, 2020). This change in approach, which is based on research gives a completely different starting point when designing a new observation tool. The tool can now be designed taking into account best practice and be aligned with effective online pedagogies whilst also taking advan-
tage of recent software updates. For example, using more collaborative tools like breakout rooms. Taking all of this into account will ensure that lesson observations are fully aligned with the educational philosophy of the institution.

The benefit of increased preparation time also allows for a comprehensive training plan for leaders. The year can begin with an induction on the online teaching best practice that informed the creation of the observation tool. Leaders can be trained on what to look for, completing observations of the same lesson in order to ensure that their scoring of observations is aligned. These alignment sessions can take place throughout the year and especially when large variances are found between different departments.

Such a rapidly changing field requires a high level of flexibility. Evaluating at the end of the program to see how effective it was will not go far enough in driving improvement. Rather what is required, is a continuous evaluation cycle which constantly drives improvement. With new research, the very nature of that evaluation may have to change as well in order to align with targeted practices. A robust evaluation tool is one that can cater for all practitioners at whatever state of development they are at, starting with a foundation of strong technical skills developing into an effective online educator implementing the best online pedagogies.

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Exploring the needs of teachers in a Middle East university using TPACK: A case study

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Abstract

From the researcher's experience as an experienced trainer in a Middle East university, teachers are still resistant towards integrating technology in teaching. In order to know the reasons behind such resistance, a case study using the technological pedagogical and content knowledge framework (TPACK) was conducted to: 1) explore the needs of teachers in a Middle East university who are resistant to integrate technology in their teaching, and 2) make recommendations that could be taken into consideration for encouraging teachers to integrate technology in their teaching. The findings showed that perceived knowledge of content is a key determinant of how much teachers want to engage with given members of support staff (trainers). In additions, it was found that teachers recognise the need for a variety of different support stakeholders, but wish to relate to such people in different ways—whether in training courses, one-off workshops and/or ad hoc approaches to fill 'gaps' in their knowledge. The findings of this study could benefit technology-training designers by taking into consideration teachers' needs before conducting any training in order to have effective outcomes. In addition, policy makers in higher education could also benefit from this study by knowing that the trainers' knowledge about the subject domain of teachers is essential for having effective technology-trainings and therefore change their policies in order to reach better outcomes. Finally, implications for future research are provided.
1. Introduction and rationale

From the researcher’s experience as a practitioner in providing training sessions for teachers in a Middle East university on how to integrate technology in teaching, it was found that teachers are still resistant towards integrating technology in teaching. That resistance still exists although the role of technology is highlighted as being prominent in today’s education since it is used as a tool for building students’ knowledge in an innovative way (Ansyari, 2015).

In order to know the reasons behind teachers’ resistance, it is important to know their needs first and in this study the researcher is focusing only on the needs related to the expertise that teachers perceive by those who support them in integrating technology in teaching. Accordingly, the research question that this study focuses on is:

1. What forms of knowledge do teachers prefer their trainers to have in order to help them integrate technology effectively in their teaching? Why?

2. Literature review

In this section, the researcher is focusing on three main themes: 1) teachers’ resistance towards integrating technology in teaching; 2) teachers’ attitudes towards technology-training programmes; and 3) recommendations for enhancing technology-training programmes. The researcher focused on these themes because she wanted to know whether the literature focused on the trainers’ knowledge while evaluating the technology-training programmes from the vantage point of teachers or not since this is the aim of this study.

2.1 Teachers’ resistance towards integrating technology in teaching

Researchers highlighted different reasons behind teachers’ resistance as follows:

- Avalos (2011) and Ham (2010) stated that teachers’ different needs and objectives are not taken into consideration while designing the professional development programmes.
- There is a disconnection between what is taught in these programmes and what is done in practice (Garet, Porter, Desimone, Birman, & Yoon, 2001).
- Dysart and Weckerle (2015) highlighted that most of the professional development trainers lack the pedagogy that enable them to train those teachers effectively since they focus only on the technical aspects (Muwanga-zake, 2008).
- The professional development programmes in higher education focused on trainings related to basic technologies (Dysart & Weckerle, 2015).
- Dahlstrom (2015) highlighted that teachers’ resistance could be the result of having student technology assistants (STAs) who are hired temporarily by the centralised technology units in the university as teachers do not feel comfortable sharing their lack of knowledge with students.
- Chai, Chin, Koh, and Tan (2013) highlighted that there is a lack in policy related educational technology research that target the use of technology in a pedagogical way for teaching specific content.

Based on the above, the resistance of teachers falls into two strands. Firstly, the focus of many professional development programmes was limited to either technology only or technology and pedagogy independent of the content those teachers (trainees) teach. Secondly, teachers’ needs related to the pedagogical use of technology in teaching certain subjects are not taken into consideration prior to designing the setting of any technology-training programmes.

In fact, any technology-training programme includes the trainer, the trainees, the learning objectives, the digital technologies, the training room, the software, and the hardware. Most of the research done so far concentrated on some of the previous elements and neglected the trainer, who plays an essential role in the training process as s/he is in direct contact with the trainees. Consequently, it is expected that his/her knowledge will affect how trainees integrate technology in their teaching.

2.2 Teachers’ attitudes towards technology-training programmes

Many researchers were interested in exploring teachers’ attitudes towards technology-training programmes and they found a number of factors that affected their effectiveness. Some of these factors are: 1) deficiency in organizational support (Uslu & Bumen, 2012); 2) disconnection between technology workshops and the teacher preparation programme (Sutton, 2011); 3) lack of support (Gronseth et al., 2010); 4) lack of motivation (Abuhmaid, 2011); 5) lack of confidence (Moore-Hayes, 2011); and 6) lack of knowing teachers’ needs prior to designing the programme (Avalos, 2011).
Based on the above, none of the studies focused on the technology trainers and how teachers perceived them. Accordingly, the researcher can infer that the data collection tools used for triggering teachers’ opinions towards the technology-training programmes did not focus on the trainers and therefore, there is lack of research in this area that needs to be tackled.

2.3 Recommendations for enhancing technology-training programmes

In addition to the researchers who were interested in knowing teachers’ attitudes towards technology-training programmes, others were also interested in providing recommendations for enhancement. Some of these recommendations are 1) having effective programme with certain learning outcomes related to real life practices (Ham, 2010); 2) having student-centred collaborative environment (Matzen & Edmunds, 2007); 3) having programme that involve emotional and cognitive factors for increasing teachers’ motivation (Avalos, 2011); and 4) having enough time for teachers to practice (Ansyari, 2015). Based on that, none of them focused on the knowledge of the trainer that can enable him/her to train teachers on the use of technology effectively. In addition, they did not include in their recommendations anything related to the knowledge this trainer should have in order to help teachers in integrating technology in teaching.

3. Theoretical framework

The researcher chose to use TPACK as a theoretical framework for this study because it will be useful in exploring the knowledge/expertise of teaching support staff that was both complex but capable of being grasped by teachers. TPACK is an extension of Shulman’s (1986) framework and it consists of three types of knowledge in addition to the interrelation between them such as: 1) technology knowledge; 2) content knowledge; 3) pedagogy knowledge; 4) pedagogical content knowledge; 5) technological pedagogical knowledge; 6) technological content knowledge; and finally 7) technological pedagogical and content knowledge. Table 1 shows the definition of each knowledge with examples as explained by Mishra and Koehler (2006).

4. Research Design

The researcher is positing this work as a case study using TPACK framework for exploring teachers’ needs for integrating technology in their teaching and eventually decrease their technology resistance.

Table 1. Definition of different types of knowledge in the TPACK

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Definition</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>CK</td>
<td>It focuses on the subject matter. (Mishra &amp; Koehler, 2006)</td>
<td>Science, Math, English, etc.</td>
</tr>
<tr>
<td>PK</td>
<td>It focuses on methods of teaching and learning in general. (Mishra &amp; Koehler, 2006)</td>
<td>Collaborative learning, problem-based learning, etc.</td>
</tr>
<tr>
<td>TK</td>
<td>It focuses on both basic technologies and advanced technologies. (Mishra &amp; Koehler, 2006)</td>
<td>Backboard, internet, computers etc.</td>
</tr>
<tr>
<td>PCK</td>
<td>It is similar to Shulman’s (1986) idea, which focuses on the knowledge of pedagogical approaches used for teaching specific content. (Mishra &amp; Koehler, 2006)</td>
<td>Problem-based learning in Science teaching.</td>
</tr>
<tr>
<td>TCK</td>
<td>It is the knowledge of how the subject matter changes when used with a certain technology. (Mishra &amp; Koehler, 2006)</td>
<td>Data analysis tools for presenting the most frequent words in a poem taught in a poetry course.</td>
</tr>
<tr>
<td>TPK</td>
<td>It is the knowledge of how technology addresses pedagogical objectives. (Mishra &amp; Koehler, 2006)</td>
<td>Online discussions for enhancing collaborative learning.</td>
</tr>
<tr>
<td>TPCK</td>
<td>It is the knowledge of how technology is used pedagogically for teaching a certain subject domain. (Mishra &amp; Koehler, 2006)</td>
<td>Online discussions for enhancing collaborative learning in literature.</td>
</tr>
</tbody>
</table>
4.1 Research Context

Context is an essential part in any educational technology research (Rosenberg & Koehler, 2015). Therefore, in this section, the researcher is describing the target context and its culture in detail. The study is conducted in an Arabic Language Instruction (ALI) department in a Middle East university. The department targets teaching Arabic as a foreign language (AFL) to non-Arabic speakers from all over the world. Teachers have long years of teaching experience in that department ranging from 20 to 30 years.

In the target university, technology trainings are offered to teachers through different sources as highlighted in Table 2.

As highlighted, there are many sources of technology trainings and there is still resistance in integrating it in AFL teaching. Therefore, there is a need to explore teachers’ needs with respect to the technology trainer they prefer to have in order to help them integrate technology in their teaching.

From the definitions highlighted previously in Table 1, the knowledge of the previously mentioned technology trainers falls into the different types of knowledge provided by the TPACK framework. For example, the “Lab assistants” fall into the TCK since they are experts in the technology that support the content area that teachers teach in specific. The “CALL director” falls into the TPCK since she is a teacher who is an expert in the technology related to teaching the same content which the other teachers teach in a pedagogical way. The “CLT” falls into the TPK and the PK since this unit shows teachers how to use technology in a pedagogical way without focusing on the subject they teach. In addition, it introduces teachers to new pedagogies used in teaching in general. The “STAs” fall into the TK since they help teachers with the technical problems they might face while using the digital technology tools in their teaching. The “AFL teachers” fall into the CK only if they have little experience in the content area they teach and they can fall into the PK if they have more experience in teaching the target content. Finally, the “Other teachers” from different disciplines fall into the CK and the PK except that the content can be anything but the content which teachers teach.

Table 2. Source of training and the typical forms of engagement

<table>
<thead>
<tr>
<th>Source of training</th>
<th>Typical forms of engagement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab assistants</td>
<td>They work in the ALI and they have a technical background and they are aware of the digital technologies that support Arabic language. They can help teachers in choosing the technology that support Arabic. Therefore, the institution positions them as experts in technology (T) related to a certain content (C) which is Arabic.</td>
</tr>
<tr>
<td>Computer aided language learning (CALL) director</td>
<td>The CALL director is a teacher in the ALI department and has a computer science background. She updates teachers with the latest technologies used in teaching AFL pedagogically and is aware of the technologies that support the content they teach. Therefore, the institution positions her as an expert in T, C, and pedagogy (P).</td>
</tr>
<tr>
<td>Centre for learning and teaching (CLT)</td>
<td>The CLT is a centralised unit that serves the entire university without targeting a specific discipline. This unit updates teachers with the latest pedagogies used in teaching in general without focusing on technology. It also focuses on the latest technologies used in teaching. Therefore, the institution positions this unit as expert in P in addition to T and P together.</td>
</tr>
<tr>
<td>Student technology assistants (STA)</td>
<td>The STAs are either graduate or undergraduate students working with the CLT. They assist teachers in fixing any technical problem they might face while using the digital technology tools, which the CLT introduced before. Therefore, the institution positions them as experts in T only.</td>
</tr>
<tr>
<td>AFL teachers</td>
<td>They are teachers who used technology in their teaching and wanted to share their experiences with their colleagues in the ALI. Therefore, the institution positions them as experts in C if they are teachers with little experience and CP if they are teachers with high experience.</td>
</tr>
<tr>
<td>Other teachers</td>
<td>They are teachers from different disciplines who want to share their experiences in using technology with other colleagues from the entire university. Therefore, the institution positions them the same as the above but the content is anything but Arabic.</td>
</tr>
</tbody>
</table>
4.2 Researcher position in context

The researcher is considered an insider in the target context and that helped in: 1) recruiting teachers (participants) and 2) eliciting longer accounts and interpret nuanced responses.

4.3 Participants and sampling technique

The researcher used convenience sampling technique for recruiting the ten participants. According to Johnson and Christensen (2014), this technique is used when participants are willing to participate voluntarily in a research study and it is important to describe the characteristics of participants accordingly. All participants are: 1) practising teachers in a Middle East university who have long years of experience; 2) attended many workshops for integrating technology in teaching; and 3) do not integrate technology in their teaching.

4.4 Data collection

The researcher used an interactive software called Articulate Storyline in order to create visuals for prompting participants' responses in the semi-structured interviews. According to Cousin (2009), the visuals can prompt responses easily especially when the researcher is asking about something complicated, so it is used in order to: 1) simplify the understanding of the questions to make it easy for participants to understand and 2) facilitate participants' responses to make them express their views freely as that is more culturally appropriate since the visuals are not personalised.

The researcher created several hypothetical identities for participants to reflect on when looking at the visual tool. Therefore, the presentation included the seven trainers with the types of knowledge s/he embraces in reference to the TPACK framework as indicated by Mishra and Koehler (2006). Each trainer is represented in the form of an avatar with a written text referring to his/her knowledge. With each trainer, an example of what that trainer can do is illustrated by visual examples for ease of understanding. The visuals used in the semi-structured interviews are in line with both the TPACK framework and the sources of training as shown in Table 3.

It is worth highlighting that the researcher piloted the instrument with: 1) a professor from another department; 2) a teacher from the same department; and 3) an outside researcher for content related validity. They all confirmed that the instrument is user friendly, attractive, simple, and can be easily understood. In addition, the outside researcher confirmed that it is suitable for answering the research question. For illustration, the following section shows the visuals used to prompt teachers' reflections in the semi-structured interviews.

### Table 3. Avatars, TPACK, and the source of training

<table>
<thead>
<tr>
<th>Avatars</th>
<th>TPACK</th>
<th>Source of training</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainer 1</td>
<td>TK</td>
<td>STAs</td>
</tr>
<tr>
<td>Trainer 2</td>
<td>CK</td>
<td>Teachers with little experience in the target content they teach</td>
</tr>
<tr>
<td>Trainer 3</td>
<td>PK</td>
<td>Other teachers or CLT</td>
</tr>
<tr>
<td>Trainer 4</td>
<td>PCK</td>
<td>Experienced teachers in the target content they teach</td>
</tr>
<tr>
<td>Trainer 5</td>
<td>TCK</td>
<td>CALL lab assistants</td>
</tr>
<tr>
<td>Trainer 6</td>
<td>TPK</td>
<td>CLT</td>
</tr>
<tr>
<td>Trainer 7</td>
<td>TPACK</td>
<td>CALL director</td>
</tr>
</tbody>
</table>

4.5 The visual tool

The researcher took into consideration certain aspects while designing this visual tool such as:

- Representing technology trainers in the form of avatars so that teachers can reflect on freely without relating them to actual trainers. That is culturally appropriate because teachers might get embarrassed and not express their views freely if details related to the training sessions and trainers are mentioned clearly.
- Transforming complex concepts into examples to make it easier for the teachers to understand.
- Adding an example button to the same screen that presents the trainer's knowledge in order to make it easy for the teacher to relate the example to what the trainer can do with that knowledge.
- Showing the examples in another pop up screen in order make the teachers focus on either the trainer's knowledge or the example related to that knowledge in order to attract their attention at one thing at a time without providing them with an excessive amount of information.
- Showing all trainers in one screen for the ease of navigation.

Having highlighted some of the design principles that the researcher used in the visual tool, the next section focuses...
on describing the different screens of that tool.

4.5.1 Choose your trainer

A snap shot of the first page of the visual tool is shown in Figure 1. Through this page, participants can click on any button to explore the knowledge of each trainer.

**Figure 1. Choose your trainer**

![Image of the visual tool](image)

4.5.2 Trainer 1 (TK)

Trainer 1 in Figure 2 represents the TK and by clicking on the example button, the teacher can see what the trainer can do with that knowledge. Same technical features are replicated with all trainers.

4.5.3 Trainer 2 (PK)

Trainer 2 in Figure 3 represents the PK.

4.5.4 Trainer 3 (CK)

Trainer 3 in Figure 4 represents the CK.

4.5.5 Trainer 4 (PCK)

Trainer 4 in Figure 5 represents the PCK.

4.5.6 Trainer 5 (TPK)

Trainer 5 in Figure 6 represents the TPK.

4.5.7 Trainer 6 (TCK)

Trainer 6 in Figure 7 represents the TCK.

4.5.8 Trainer 7 (TPCK)

Trainer 7 in Figure 8 represents the TPCK.

4.6 Data analysis technique

The researcher followed this process for analysing the data:

- Listened to the ten interviews two times and transcribed them accordingly. Each interview lasted between 20 and 30 minutes. The total number of words after transcribing the interviews was 6641.
- Read the transcripts four times and coded the parts that are relevant to the research question.
- Used data reduction technique that consists of three phases (Ansyari, 2015): 1) transcribing, 2) generating categories through coding, and 3) interpreting data.

For consistency, the researcher gave the transcript to another researcher in order to make sure that they both agree on the same themes for answering the research question.

4.7 Study Procedure

Firstly, the researcher asked the teachers three open-ended questions in order to prepare them for the second part. The three questions are:

1. What courses do you teach this semester?
2. How do you teach these courses to your students?
3. What kind of technology do you use in these courses and why?

Secondly, the researcher asked the teachers to look at the visual tool described in section 4.5 in order to prompt their responses. The researcher then asked each teacher separately to imagine that she is reading about the expertise of the trainer, and then reflect on how the knowledge of each can help in integrating technology in her teaching and why.
Figure 5. Trainer 4

Ways of teaching AFL

I have knowledge of:
- Using certain teaching strategies for teaching AFL.
- What makes the representation of AFL easy to learn.
- How to address students' different learning styles in order to foster meaning and understanding.

Example

Figure 6. Trainer 5

Technology and the different ways of teaching

I have knowledge of:
- Using the different capabilities of various technologies for using different teaching strategies.

Example

Figure 7. Trainer 6

Technology used in TAFL

(Arabic has certain features unlike English language such as direction and script)

I have knowledge of using technology for representing material written in Arabic.

Example
5. Findings

The results are organised according to the themes that emerged from the transcribed interviews. By synthesising the findings of this study and connecting them to the research question, three main themes were found.

5.1 Preference for choosing a certain trainer

In response to the research question, Figure 9 shows teachers’ preference with respect to the technology trainer they prefer to have as follows:

As the graph shows, AFL teachers prefer trainer seven who represents TPCK and trainer five who represents TC to trainers six and one who represent TP and T. In addition, they did not prefer the other trainers who are not experts in technology at all such as trainers two, three, and four who represent C, P, and PC.

Therefore, it can be inferred that aside from technology, content plays a significant role in choosing the trainer who can help them in integrating technology in their teaching. Accordingly, we can say that although technology is an important knowledge, which teachers prefer their trainers to have, it is still not enough solely. For illustration, as shown from the above graph, teachers prefer trainers who have knowledge in technology and content to trainers who have knowledge in technology only. In addition, they prefer trainers who have knowledge in technology and pedagogy to trainers who have knowledge in technology only. Therefore, technology alone is not effective without having knowledge mainly in content and pedagogy followed by content and finally pedagogy.

Based on the above, teachers preferred trainer seven who has knowledge in: 1) their content area, 2) pedagogies used for teaching that content area, and 3) the technologies used to meet the needs of both content area and pedagogies used for teaching it. Having highlighted the trainers they prefer to have the most and the least, the next sections focus on the reasons behind that preference.

5.2 Reasons for preferring certain trainers

In response to the second part of the research question, this section presents the reasons behind preferring certain trainers in line with the TPACK framework.

5.2.1 Content knowledge plays a significant role in choosing to engage with the trainer

The ten teachers preferred trainer seven with the TPCK the most because of different reasons. They said that she could save them time and effort, because they do not have to explain everything related to teaching their subject again. As
described by one teacher: ‘she knows how to do the job, so we are not reinventing the wheel.’ In addition, they indicated that this trainer could show them which technology tool works with “Arabic language”, the subject they teach, since Arabic has special features unlike other languages such as script and direction. For example, one teacher said: ‘There are some programs that do not work with Arabic so if she doesn’t know that, then she might teach me technology that does not apply to Arabic, so it will be like a waste of time and it happened to me. Teaching is something and teaching Arabic is something totally different.’

Furthermore, they mentioned that this trainer can help them in choosing the suitable technology tool that is appropriate to the material and the methodology used for teaching that material. That trainer can also help in choosing the technology used for fostering languages in specific because she has a background in linguistics especially with respect to Arabic. Moreover, they highlighted that that trainer can guide them in designing interactive activities that work with different skills such as listening, speaking, writing, and reading. Finally, they said that they could benefit from this trainer because she can share with them real examples of how technology was used in her classes, what worked, and what did not work. For example, one teacher said: ‘Of course, this is great. I need this trainer. I will discuss with her everything about the class, the students, the material, and ways of teaching, so it will be easy to discuss everything with her. We are in harmony together.’

5.2.2 Knowledge of technology used for teaching specific content helps in choosing to engage with the trainer

The ten teachers chose trainer five with the TCK because this trainer can tell them which digital technology tool supports the content they teach. However, they indicated that they could attend one or two sessions only. For illustration, one teacher said ‘A general instructor but I cannot accept her to be my trainer through the semester. I can take with her a session or two but not more than that.’ That shows that they only need this trainer for a limited time in order to ask certain technical questions related to the content they teach but not to train them on how to use technology in a pedagogical way.

5.2.3 Knowledge of both technology and pedagogy help in choosing to engage with the trainer

Seven teachers chose trainer six with the TPK because she can give them general ideas that they might apply in the classrooms but they need to work with them in order to fill in the gaps of knowledge. For example, a teacher said: ‘I would attend this and see what goes with Arabic and I will manage, but I will exert effort from my part.’

5.2.4 Knowledge of technology only is not enough for choosing to engage with the trainer

Four teachers only chose trainer one with the TK because they all agreed that this trainer can help them in fixing technical troubleshooting problems related to hardware or software only but not more than that. For illustration, one teacher said: ‘She can help me in dealing with technical problems if something is not working. She can help me to an extent. That requires that I know the software and know how I want to use it and then if something is not clear to me, I can use her help.’ That shows that they cannot depend on that trainer for helping them integrate technology in a pedagogical way for teaching APL but only use her as a reference whenever they have a technical problem.

5.3 Reasons for not choosing certain trainers

This section highlights the reasons behind not choosing certain trainers and that is presented in line with the TPACK framework.

5.3.1 Lack of trainer’s pedagogical experience

Four teachers highlighted that trainer six with the TPK will not help them because they attend certain workshops and after starting to use the technology tool, they find that it does not work with the content they teach. At that time, they feel frustrated as their time and effort are wasted. For example, one teacher said: ‘No that will waste my time because sometimes we choose the tool and after we choose it, it does not work with Arabic.’

5.3.2 Lack of trainer’s knowledge in content and pedagogy

Almost all teachers rejected trainers two, three, and four who represent CK, PK, and PCK saying that they are not experts in technology, so they would not be able to help them because they might have the same level of knowledge they already have or maybe less. For illustration, one teacher said: ‘I do not want this trainer. I know what she knows, so no benefit added.’

5.3.3 Technological knowledge only is not enough

For trainer one who represents the TK, they all agreed that technology is not an end in itself and since that trainer know nothing about the Arabic language or the teaching methodologies used in teaching it, then it will be a waste
of time and effort to participate in a training like that. For illustration, a teacher said: ‘No because technology helps us in teaching so the call is teaching not technology.’

6. Discussion

It is worth mentioning that the use of TPACK framework in research studies that mainly target needs analysis has been recognised as a need for future research studies (Voogt, Fisser, Pareja Roblin, Tondeur, & van Braakt, 2013). Therefore, in the researcher’s point of view, by exploring teacher’ needs, future technology-training programmes can be designed accordingly. In addition, policy makers in the university can be notified by the findings in order to cooperate with the department to meet teachers’ needs and eventually encourage them to integrate technology in their teaching.

This study is also considered an expansion to the TPACK framework as it showed originality with respect to how it can be used. For example, according to Voogt, Fisser, Pareja Roblin, Tondeur, and Van Braakt (2013), the TPACK framework was used in previous research studies in order to: 1) measure teachers’ beliefs; 2) measure pre-service teachers’ use of TPACK; and 3) develop teachers’ use of TPACK. Therefore, it was not used for designing data collection tools that aim to elicit teachers’ needs with respect to the technology trainer they prefer to have in order to help them integrate technology in their teaching. Accordingly, the researcher considers this study a contribution to the TPACK framework.

Secondly, the findings showed that content knowledge plays a significant role in influencing teachers to prefer some particular trainers. The main reasons behind that are: 1) saving them time and effort since they are already aware of teaching AFL; 2) providing them with the technology tools that support Arabic language; and 3) helping them in designing interactive activities that work with different skills such as listening, speaking, writing, and reading.

Thirdly, this study is considered a contribution to the body of literature because it emphasizes a need for considering the technology-trainer knowledge while designing professional development programmes for teachers. This need was not tackled in previous research studies since they were mainly concentrating on general aspects such as lack of support (Gronseth et al., 2010); lack of motivation (Abuhmaid, 2011); and lack of confidence (Moore-Hayes, 2011), but they did not focus on anything related to the trainers’ knowledge. Moreover, the recommendations made for enhancing the technology-training programmes did not mention anything related to the trainers’ knowledge. However, they only concentrated on closing the gap between theory and practice (Ham, 2010) and providing an environment that foster collaborative learning (Matzen & Edmunds, 2007) that increases teachers’ motivation.

Fourthly, this study highlighted certain design principles that could be taken into consideration during the design of future professional development programmes that was not highlighted in previous literature before such as:

- Content knowledge plays a significant role in choosing to engage with the trainer.
- Knowledge of technology used for teaching specific content helps in choosing to engage with the trainer.
- Knowledge of both technology and pedagogy help in choosing to engage with the trainer.
- Knowledge of technology only is not enough for choosing to engage with the trainer.

Fifthly, this study highlighted different reasons for not choosing certain trainers to engage in during professional development programmes as that was not highlighted in previous literature before such as:

- Lack of trainer’s pedagogical experience.
- Lack of trainer’s knowledge in content and pedagogy.
- Technological knowledge only is not enough.

7. Conclusion and future implications

This case study explored the needs of teachers in a Middle East university who are resistant to integrate technology in their teaching through using the TPACK framework. The TPACK succeeded through the visual tool that the researcher designed to elicit teachers’ needs in exploring the knowledge/expertise of teaching support staff that was both complex but capable of being grasped by teachers. By taking teachers’ needs into consideration, better outcomes might be achieved leading to a decrease in technology resistance and an increase in technology integration. Based on that, follow-up research can focus on: 1) using the same visual tool designed by the researcher in other contexts to elicit teachers’ perceptions regarding their needs and compare them to the findings of this study to see the similarities and differences, and 2) applying teachers’ needs as highlighted in this study in the design and development of professional development programmes to see whether the technology resistance decreased and the technology integration increased or not.
References


About the author

Rasha Essam graduated with a PhD in E-Research and Technology Enhanced Learning in 2019. She is a former faculty member and technology enhanced learning director at the American University in Cairo for almost 10 years and now she is a self-employed educational technology consultant and e-learning service provider with different learning organisations both inside and outside Egypt. In addition, she has long years of experience in training teachers of different age groups on how to use technology in learning, educational leadership, research, analysis, curriculum design, and instructional design. Her research expertise is in 1) design-based research; 2) learning design; 3) teachers’ training; 4) designing, developing, and implementing professional development programmes; 5) foreign language teaching and learning; 6) technology affordances; 7) programmes’ evaluation; 8) online, blended, and flipped classroom teaching and learning; 9) computer supported collaborative learning; 10) Web 2.0 technologies; and 11) data visualisation and representation. Rasha has a solid background in computer science and information system (B.Sc.); educational leadership (MA); and teaching Arabic as a foreign language (MA). Her educational and professional backgrounds enable her to be deeply aware of how to use technology effectively in the field of education since she wears more than one hat that allows her to integrate technology into any learning organization taking into consideration their context and needs. Rasha’s website can be found at www.rashaedutech.com

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A brave new hybrid world: Teaching, teamwork and technology under quarantine

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Abstract

In early March the United Arab Emirates shifted to Ministry-mandated remote learning. As the Campus Dean for the Abu Dhabi Campus of the New York Institute of Technology (NYIT) this posed logistical challenges but also promised opportunities for my campus. As a teacher, I had many questions about how the territory of cyberspace would accommodate a pedagogy and process of active learning. I worried, too, about how the loss of community in the form of a physical campus and classrooms would impact students’ mental health and well-being. The open door policy of the Dean’s Office would certainly be a casualty of the shift to online learning. Propelled by the curiosity of a life-long learner, I decided to jump into the fray rather than sit on the sidelines as verdicts were rendered daily about remote learning. I registered for Idesign—an online course to learn the fundamentals of online teaching. By summer, I was ready to pivot fully with the rest of the campus and the world in explorations of online learning. I offered two hybrid remote Arts and Science courses (The Sociological Imagination and Reading the Harlem Renaissance) in the summer of 2020. In weekly encounters and pandemic journals, students and I grappled with the frustration of quarantine and our forced condition of online living and learning. In both classes, the web-based tool VoiceThread was used to take advantage of a “multisensory environment” to create Communities of Inquiry (the CoI framework is widely understood as a peace where teachers promote an active...
cognitive presence, social presence, and teaching presence). Following a brief overview of the timing and conditions of the shift to remote learning in the U.A.E., this paper will explore three pieces of student work as case studies in which role-play, virtual protest and writing projects were produced using VoiceThread. In each case, content, collaboration and community (building) bridged synchronous and asynchronous modalities producing new innovations for high-impact student centered learning in the face of Covid-19.

1. Ready, set go: Assessing campus readiness

In this time, as the Covid-19 pandemic burns through us, our world is passing through a portal. We have journeyed to a place from which it looks unlikely that we can return, at least not without some kind of serious rupture from the past—social, political, economic, ideological… As we pass through this portal into another kind of world, we will have to ask ourselves what we want to take with us and what we want to leave behind. Arundhati Roy, *Azadi*

By late February 2020, with a global public health crisis gathering more insistent media attention my Provost in N.Y. advised me to prepare the NYIT Abu Dhabi campus for the distinct possibility of disruption. How would you respond, he asked, to the increasingly likely event of campus closures or other restrictions to proceeding with an on-campus semester? We talked through a range of practical considerations: What might an interruption mean for students and teachers displaced from physical classrooms? How could lessons and assignments be delivered? While his warning proved prescient, I had been a step ahead having already convened the NYIT Abu Dhabi faculty to discuss communications measures we should take with the student rumor network already abuzz. At the faculty meeting, we also debated what logistics planning would position us for a range of then-unknown scenarios.

After the meeting, all teachers were asked to complete a Remote Readiness form in which they addressed questions framed around teaching and learning expectations, communication and course delivery mechanisms:

• Am I prepared to take my course(s) on-line/remote?
• How? (e.g., Blackboard, Google classroom, Voice Thread, Jing, Zoom, DL-room, other)
• When and how will I communicate with students in advance of and during a possible shift away from campus?
• What types of course work remain in the class? (e.g., lecture(s), homework and other written assignments, oral presentations, group work, quizzes & exams, final exam or final projects)
• What are the current due dates for remaining coursework in the syllabus?
• What are some challenges I might encounter with a remote plan?
• What support will I need in advance and during the shift to remote learning?

I was familiar with the value of taking a collective inventory of teaching and technology from my days as campus dean at NYIT’s China campus. Because of slow internet connections and the restrictions of China’s Great Firewall it is common practice for Western teachers in China to frequently share knowledge about accessible digital tools (apps, platforms) and to talk about how these inform pedagogical practices. Tools that Chinese students make everyday use of (e.g., WeChat, Alipay) platforms) and to talk about how these inform pedagogical practices. Tools that Chinese students make everyday use of (e.g., WeChat, Alipay) for shopping, entertainment and connecting to friends can quickly be leveraged for teaching as well as communications. If there is one great lesson about teaching with technology in China it is that there is always a workaround with tech challenges.

From the current fog of “zoom fatigue” it may seem a distant memory but also useful to recall that when the U.A.E. first shifted to remote learning, Zoom was not a widely available option for remote classroom use. Because NYIT Abu Dhabi is hosted on a government campus we had not faced Zoom restrictions and thus made frequent on-campus use of Zoom for collaborations (including on-line and DL classes) with NYIT global campuses in N.Y., Vancouver and China. The U.A.E. block raised initial worries. Colleagues and I immediately identified Microsoft Teams and Cisco Webex as similar videoconferencing options and we each devoted time to reviewing and sharing similarities and differences with Zoom. These options could constitute the virtual “face-to-face” or synchronous aspect of remote learning. We also monitored daily any indications that restrictions might be eased on Zoom for educational use—a shift that came to pass, making Zoom the preferred video conferencing platform for the NYIT Abu Dhabi campus.

The NYIT Abu Dhabi faculty and staff also attended a series of “crash” training sessions about on-line teaching with Blackboard which is the primary learning management system (LMS) for NYIT (note: since fall 2020 the university initiated a shift to Canvas which will take full effect by summer 2021). For now, Blackboard would be useful but the training primarily delivered a “nuts and bolts” approach to
the practical aspects of managing the shell. In a larger sense, our training experience with Blackboard deferred broader inquiries into the pedagogical aspects of online teaching with Blackboard (or any LMS for that matter).

Generally, the School of Management colleagues were most prepared to shift if remote learning were to be implemented. In part, this was because Blackboard was an already widely used tool for communicating with students and receiving assignment submissions (checked through plagiarism detection). School of Management students were also familiar with on-line simulations and global business competitions which are frequently used to promote active and experiential learning inside and outside of the classroom. Issues for the Mechanical Engineering department were minor: whiteboards would be necessary for solving equations and more major: missed time in the fluids laboratory. In the end, technology solutions were close at hand for the engineers. We discovered the whiteboard features in Zoom and Webex which we made use of along with repurposing a wireless graphic tablet foraged from our campus DL room and put to use in offices converted to teaching studios. Software simulations were a serviceable replacement for missed lab time. It seemed that we had many tools at our disposal and would be ready to go remote when needed.

A colleague in the Interior Design department, however, was panicked. A final campus challenge was the design department “pin-up.” This end-of-semester experience for architecture and design students is where student work is displayed to be presented and critiqued in front of an audience of guest critics (usually current internship providers and potential employers) along with alumni, family and friends. The pin-up is an academic big deal: After a semester of sprawling messy studio work in isolation, the pin-up is when disheveled students operating on little sleep and a lot of caffeine pull all together in the department’s gallery space. It is a bit like a graduation ceremony for big projects. And, the pin-up is a big social production too: hair and makeup, coffee and snacks for the invited guests along with an electric buzz crackling throughout the design building. In all of our campus discussions of remote readiness we had been eager to adapt and embrace a range of technologies and push beyond our comfort zones. What we hadn’t thoroughly explored was the spatial losses we would experience in shifting our learning environment and teaching tools. The pin-up was a reminder of this.

Thankfully, the N.Y.-based NYIT Director of the Center for Teaching and Learning (CTL) had a suggestion. After reviewing the remaining assignments in our design program semester she proposed that we take a look at VoiceThread, the collaborative, multimedia slide show that allows students and teachers to work cooperatively for coursework using voice, text and image along with audio and video files in an asynchronous format. Student presenters and external audiences also can come together using VoiceThread asynchronously for presentations, feedback and critique. This was an inventive solution for the challenge of the moment (Kirby and Hulan, 2016). Three sets of guest critics were invited for each student presentation—industry professionals and a mixture of current students, recent and older alumni from the program. All users were quick to adapt to the collaborative features of VoiceThread without orientation or training which proved useful in its rollout as a quick fix.

As we were learning, the disruptions that pandemic brought to educators around the world and at all levels (K-12 and university) called on teachers not only to be inventive but also to be pragmatic and reflective. It is safe to say that the spring semester was for many teachers a salvage job. Lessons and assignments were tossed overboard and Pass/Fail grades were implemented in many programs—but we got our students to the finish line. In the case of the U.A.E. this was a mercifully short period of time in which we were able to bring the semester to a close. I have talked to dozens of teachers in the time since who admit that they welcomed the chance to refresh and in some cases reinvent courses. Many teachers, too, have welcomed the reflectiveness that remote learning invited as we considered choices about what students really need to know and how to ensure that happens. On the horizon, bigger challenges loomed as the pandemic and quarantine extended remote learning into summer and fall semesters.

2. Remote learning

Once I felt that NYIT Abu Dhabi faculty and students were safely settling into the rhythms and routines of remote learning I decided to enroll in a course on the fundamentals of on-line teaching that was made available to NYIT teaching faculty and administrators. For me, this became a reflective time (and space) where I could think about teaching and learning challenges from the perspective of faculty and students. The course served as an ideal companion to the more nuts and bolts approach that had been delivered in the NYIT Blackboard on-line teaching certification. At the end of the Blackboard certification course I felt like I knew what to do and how in terms of navigating blackboard as a tool. I didn’t however feel like I was equipped for what to do and

1 https://voicethread.com/about/features/
why if I wanted to create an outstanding on-line learning experience. The I-design course I was enrolled in bridged the gap through an introductory level overview of some of the pedagogical aspects of on-line teaching.

The main takeaway from the course was the concept of Communities of Inquiry (COI) defined as a focus on the process of inquiry with connections to Dewey’s collaborative constructivist principles. The COI is a concept familiar to long-time practitioners of on-line education but worth reviewing for newcomers:

- The teaching presence is defined as “the design, facilitation and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes” (Anderson, Rourke, Garrison, & Archer, 2001, p. 5).

- The cognitive presence refers to the extent to which the participating members are able to construct and confirm meaning through sustained reflection and discourse (Garrison, Anderson, & Archer, 2001). The cognitive presence reflects the acquisition and application of high-order knowledge, which depends on careful instructional design and support in the teaching presence and an interactive social learning environment in the social presence (Garrison et al., 2001).

- Garrison (2009) defines the social presence as “the ability of participants to identify with the community, communicate purposefully in a trusting environment, and develop interpersonal relationships by way of projecting their individual personalities”

Through distinct modules on Teaching Presence, Social Presence and Cognitive Presence we received practical tips about the design and delivery of on-line courses. Throughout the I-design course modules we were pushed to think (anew) about teacher behavior, expectations, content selections, assessment models, varied learning styles, the importance of collaboration. The three conceptual areas of the Communities of Inquiry framework—Teaching Presence, Social Presence, Cognitive Presence—were introduced separately but were constantly linked as interdependent aspects of successful on-line teaching which also must reflect an “integration of social, technological, and instructional processes.”

This meant that intentionality was brought front and center to allow reflective teachers to contemplate how to translate the learning experience from an on-campus to an on-line environment. In particular, the I-design course especially challenged me to think about how the “space” of on-line teaching transforms the roles, relationship and identities of teachers and students. The course also centered technology—not just as a tool but as a matter of pedagogy: In I-design, Bloom’s taxonomy is given a digital update—from apps to TED talks and blogging, every level of cognitive development can be linked to various digital tools chosen with a purpose.

Broadly speaking, the I-design course emphasized some important differences between remote and on-line teaching. At the same time, the course provided a conceptual framework to inject on-line best practices into hybrid and remote learning environments. A surprise for me as well was the way that the I-design course also celebrated many now familiar concepts I have seen in my last 20+ years as a teacher in training. Ideas that once seemed shockingly new and challenging our sense of self (as teachers) were also greeted decades ago with “I can’t,” “This doesn’t,” “Not in my class” (think flipped classrooms, the very idea of student-centered learning, think-pair-share). The I-design course pushed me to see that whether in the classroom or on-line the “performativity” of teaching/learning always requires constant questioning and thoughtful reflection about design, goals and outcomes as well as how we create learning communities and visualize spatial practices.

For the remainder of this paper I will explore three pieces of student work as case studies in which collaborative reading and writing projects, role-play and a virtual protest were produced using VoiceThread. In each case, content, collaboration and community (building) bridged synchronous and asynchronous modalities producing new innovations for high-impact student centered learning in the face of Covid-19 (Ward et al., 2019).

The first piece of student work we will review here came from students in the sociological imagination course. The assignment was designed as a report to the Ministry of Education to encourage students to approach the real world—and in this case, the realities of the pandemic—as an arena for problem solving, applied learning, collaboration and communication.

3. Robots and remote learning

In the U.A.E., remote learning entered a second phase when students did not return to campuses for summer session courses from May to July. No longer were we looking to simply survive with quick fixes and hastily arranged Zoom conferences. This is what we are doing. Remote just became our shared reality. By summer, armed with an I-design certification, I was ready to pivot fully with the rest of the
The Ministry of Education Cyber Proxy Student Initiative

THE CHALLENGE: University students in the UAE have grown tired of remote learning. What if our schools reopen ... but we have to send cyber proxies or robots to campus in our place? At the request of the local Ministry of Education, ICBS 300 students will prepare a programming guide to “socialize” the cyberproxies so they can capably navigate the university social scene and setting. The guide should accomplish the following:

- **Clear overview and introduction** of the project with background and context
- **Clear review and explanation of terminology** of distinct chapters in The Presentation of Self (Teams, Communication Out of Character, Discrepant Roles, Regions and Region Behavior, Performances and the Arts of Impression Management)
- **Clear programming strategies** that address fundamental ideas and concerns raised in each of the chapters of The Presentation of Self (Teams, Communication Out of Character, Discrepant Roles, Regions and Region Behavior, Performances and the Arts of Impression Management)
- The presentation is a **small team AND whole class collaboration**
- The presentation will be **designed with Vt** as an innovative way to modernize the traditional white paper format with a multisensory media experience.

(see Purdue Owl [https://owl.purdue.edu/owl/subject_specific_writing/professional_technical_writing/white_papers/index.html](https://owl.purdue.edu/owl/subject_specific_writing/professional_technical_writing/white_papers/index.html)).

world in explorations of on-line, hybrid/remote learning. I offered two hybrid remote Arts and Science courses (ICBS 300: The Sociological Imagination and ICLT 300: Reading the Harlem Renaissance) in the summer of 2020. In weekly encounters via teleconferencing, on-line discussion forums and pandemic journals, students and I grappled with the frustration of quarantine and our forced condition of on-line living and learning.

It felt especially ironic not to be meeting face-to-face with students in ICBS 300: The Sociological Imagination given that the sociology we were studying, with its focus on the interactions of individuals and institutions, left us pondering what is society without face-to-face contact. As an assigned course reading we studied Erving Goffman’s *Presentation of Self in Everyday Life*, a well-known work of social psychology that applies the metaphor of theater to social interactions through a theory called dramaturgy. If all the world’s a stage, goes Goffman’s thinking, then men and women are but ‘socialized’ players on it.

On-line we focused our imagination on questions quixotic yet quotidian. What if we were unable to return to campus but could send cyborgs in our place? Students’ internet explorations into AI and cyborgs unearthed ethical dilemmas and unanswered aspects about relationships between society, psychology and technology. Our Goffman reading raised serious doubts about the ability of a cyborg, robot or other creation of technology to adequately and effectively substitute for the in-person, face-to-face selves that we know. But could Goffman’s dramaturgy as a programming guide be used to equip robot proxies with social skills like etiquette, tact and teamwork? I challenged students in a formal assignment to imagine that the Ministry of Education had asked the ICBS300 class to produce the guide to “socialize” programmed proxies so they could capably navigate the social scene and setting of schools and universities (see Table 1). (NOTE: Shih-Hsien Yang’s assertion that teacher presence, which is not the same as teaching presence, will be found in assignment instructions).

The resulting VoiceThread project employed a Communities of Inquiry framework—including Teaching Presence, Social Presence and Cognitive Presence. Two foundational layers and a collaborative framework were built into the assignment to support cognitive and social presence for the students. First, students were assigned the book as a collaborative reading exercise. This meant that everyone read the Introduction, two chapters and the conclusion of Goffman’s book to have a shared starting point. The second part of the collaborative reading was done by teams. Each team had an individual reading assignment, meaning that others in the class could not “know” the whole of the book unless and until as teams the parts were effectively brought together in the class VoiceThread. To ensure this, each team was charged with defining relevant concepts and terminol-
ologies from their respective chapters. A white paper format was identified as the presentation model which would be adapted to VoiceThread for the Ministry report.

ICBS 300 students used VoiceThread as an innovative way to modernize the traditional white paper format with a multisensory media experience. The final stage of the project was peer review.

Students were asked as reviewers to weigh in on whether the project would be ready to go the actual Ministry of Education and whether they had been successful teachers and learners. Students used a rubric scoring guide and reflective evaluation with comments about i) What worked well (for example, what is something they might adopt in a future project) ii) What would be even better if (suggestions for improvement) and iii) whether they had gained a solid understanding of each chapter in The Presentation of Self, including chapters they had not been assigned to read, and the book as a whole. The overall conclusion from students revealed their dual roles of producing a teaching presence for one another as active learners.

The second example of student work in the Sociological Imagination course, like the assignment about robots and remote learning, was inspired by students’ developing awareness of the impact of Covid-19. In this case, media coverage about gender disparities brought to light during the pandemic allowed us to again use coursework as an arena for problem solving, applied learning, collaboration and communication.

4. Gender and pandemic

Students in ICBS 300 had been assigned to read Arlie Hochschild’s book The Second Shift. In the book Hochschild documents the hours of labor women undertake in their homes which essentially adds up to a second shift of work for women who also have paid jobs in the formal economy. As more and more women have been pulled into the workforce there is an identifiable lag in culture and ideology along with men’s conceptions of wives and mothers and women’s understanding of their own position in the work and family balance. Hochschild identifies this as a stalled revolution playing out as a mismatch between traditional and transitional egalitarian values in families and society. During the semester we could see frequent media references to the vocabulary of our course as the ideas of a second shift, a male-female leisure gap and a stalled revolution offered a window into the gendered stresses of the pandemic.

For many students, the first take at reading The Second Shift can often be superficial—men should do more, that husband thinks he helps out enough, the leaning feminists in the class are on the side of the beleaguered career women and frustrated with the notion that women who make more money than their spouses still take on what they see as ‘dated’ roles. But at a deeper level we are offered a complicated cast of characters and a complex set of internal and external factors that bring these people to life. Hochschild’s study combines interviews with families and ethnographic research. Her book introduces the biographical details of each couple in the study, facts about their work life and professional statuses (a range of class positions from blue collar to white collar work and a wide range of income levels). From the site-based interviews, Hochschild allows students to make visits to the families’ homes and as readers we are provided with minutely detailed descriptions of kitchens and appliances, vegetables on the chopping block and simmering pots of dinner, living areas with big screen televisions and family play spaces littered with toys, piles of laundry, curtains and carpet, garages strewn with tools, lawns and patio furniture, in short the three-dimensionality of real lives that helps us put our actors in context.

Table 2. Second Shift role play script and scene preparation

<table>
<thead>
<tr>
<th>Explain the title of your chapter</th>
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</thead>
<tbody>
<tr>
<td>FAMILY MEMBERS:</td>
</tr>
<tr>
<td>Names/Bio details</td>
</tr>
<tr>
<td>Occupation or profession</td>
</tr>
<tr>
<td>Work, marriage and family expectations</td>
</tr>
<tr>
<td>Description of Household setting</td>
</tr>
<tr>
<td>Second shift details:</td>
</tr>
<tr>
<td>How is the second shift described in the chapter?</td>
</tr>
<tr>
<td>Time of day/days of the week</td>
</tr>
<tr>
<td>List of “chores”</td>
</tr>
<tr>
<td>(*outside help or not)</td>
</tr>
<tr>
<td>List and define any particular terms/concepts (like stalled revolution or leisure gap) used in your chapter</td>
</tr>
<tr>
<td>Gender Ideologies?</td>
</tr>
<tr>
<td>Solutions this family creates for problems of the second shift</td>
</tr>
<tr>
<td>Examples: myths/avoidance/vocabulary/tricks</td>
</tr>
<tr>
<td>How does your family reflect larger sociological issue(s)</td>
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</tbody>
</table>
Having the class enact role play is an effective way for them to walk a mile in the shoes of others—be they high heels or wingtips. While this is typically an assignment that would be done in class, with students preparing and reading scripts on the stage of the classroom, here we will translate this into cyberspace. Each student is assigned a character. Each character belongs to a couple. From the outset all classwork will be individual and teamwork with a partner. Each student must learn as much as they can about their character as an individual and as a partner in one of the married couples in Hochschild’s study. Students are provided with a table with character assignments and script preparation again following Shih-Hsien Yang’s assertion that teacher presence, which is not the same as teaching presence, will be found in assignment instructions (see Table 2).

Two sets of VoiceThread projects were the final stage of work in this unit of study. Here students employed a Communities of Inquiry framework—including Teaching Presence, Social Presence and Cognitive Presence. The first Vt was a team submission with couples introducing themselves as the husband and wife in the family they were assigned to study. At this stage, students were asked to be creative in sharing as many details as they could from the personal/family script development. Early in the semester students had shared that many were familiar with asynchronous communities from experiences with simulation games online. This supports the idea that today’s students are poised to take advantage of asynchronous learning environments if properly structured: “In terms establishing social presence,” argues James Farmer, writing about weblogs and other online interactive technologies, “it can be argued that weblogs offer a significant opportunity for users to project themselves as “real” people” (Farmer, 2004).

I found that my students were easily able to translate previous experiences with on-line simulations to the strategies and approaches of the asynchronous aspects of our remote course. Here students used the ethnographic details of Hochschild’s work not only to develop characters but to produce richly detailed visual spaces that depicted the household and work environments of their families (see Figure 1). With text and voice entries as well as detailed slides students were able to create a multisensory identity for each of their characters: as individual men and women, husbands and wives but also in their family roles as mothers and fathers and work identities as well (see Figure 2). For some students this was a tightly scripted (at times stilted) exercise that allowed them to adopt the tone of a PPT delivery.
For other students, the initial set-up in Vt yielded more animated and creative deliveries—male and female students tried on a range of tone and timber with their voices to suggest their shifts along a spectrum of masculine and feminine identities. Bravo, doubt, romance, gentle bickering and simmering resentments edged into the “couples” introductions of themselves and the details of their lives, careers and households. The text and slide presentations of what students imagined home and office spaces looked like were the context for the characters they introduced (see Figure 3).

As a final stage of the gender and pandemic project based on reading *The Second Shift*, VoiceThread was used to produce a class-wide collaboration in which students could choose from one of three scenarios to join as wives, husbands and families in joint discussions/activities. The final stage of the class project would be a role play where the couples would come together with others. In the last week of class, students received instructions about the format and were asked to do three things to prepare:

- Get into character (a shortened version of the table of information they have already prepared)
- Arm themselves with enough vocabulary to be able to make informed contributions to the discussion (they have already learned the majority of these terms by reading and completing study questions for the individual and shared assigned reading)
- Read the three scenarios (school/office/beach gathering) and be prepared to join a role play VoiceThread which would be assigned on Sunday.

Students set themselves up in the space of VoiceThread and conducted forums/conversations as assigned. Their role play was lively, animated and informed by the knowledge of the text. With image, audio and text, information and imagination came together in the space of VoiceThread scenarios. In terms of evaluating knowledge construction and collaboration students completed peer review forms in which they were asked to use a rubric to score what they had learned. From a teaching perspective, my focus was on assessing the application and creative responses in connecting a book that was first written in 1989 and reissued in 2012 to argument and analysis about the current pandemic situation.

Thinking about the constructivist foundations that underlie our work as Communities of Inquiry, it is clear that there are fruitful ways that we can leverage asynchronous and collaborative technologies such as VoiceThread. In “Community of Inquiry: Social Presence Revisited,” Karel Kreijns, Frederik van Acker, Marjan Vermeulen, Hans van Buuren disentangle the social presence construct, arguing that “it actually represents two constructs, namely (1) ‘social presence’ (degree of ‘realness’ of the other in the communication), and (2) ‘social space’ (degree to which social interpersonal relationships are salient).” The role play scenarios using the Second Shift and its families to establish both a social presence and a social space put this to the test (see Tables 3, 4, and 5).

### Table 3. Role Play Scenario One—School Meeting with parents

**SCENARIO ONE**

Your neighborhood school just sent an e-vite. You and your spouse are asked to attend a virtual town hall meeting with other parents to discuss post-Pandemic planning for school re-opening.

Three proposals are on the table:
- School will fully open and all children will return to class but with modified timings;
- Schools will partially reopen and there will be a blend of remote and in-person learning for your child(ren);
- School buildings will remain closed and all classes will continue on-line

As she clicks through slides on her shared screen, the school head introduces a provocative question: Is the post-pandemic school arrangement related to the second shift? A rather heated exchange breaks out between the parents but in the middle of moderating the discussion the school head has a child care crisis and hands the reins of the meeting over to her deputy. He steers the meeting back to the topic of school and clicks onto the next slide that asks for a virtual show of hands about which of the three school reopening choices parents prefer. But some parents want to continue the discussion about the second shift. Others think this is off-topic and want to stick to details about school and cast votes about their re-opening preferences. What do you think—is there room in this discussion for the Second Shift? Why or why not?
Table 4. Role Play Scenario Two—HR Meeting at Work

<table>
<thead>
<tr>
<th>SCENARIO TWO</th>
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<tr>
<td>Your in-box dings, signaling a work announcement: there will be a company-wide HR session at work tomorrow to discuss the current situation. After a few rounds of employee furloughs, layoffs and downsizing at your job, all continuing employees will be required to work from home. The HR department convenes a zoom meeting to solicit input about what type of support is needed for employees working at home. Your company has never been known to be very family friendly and most of your co-workers expect the meeting to focus on work-related matters only. Some colleagues, however, want to raise the Second Shift as a pressing workplace issue. Others are worried about the job climate (lots of pink slips in the region) and think it is better to stay quiet on this subject. Of those of you who do speak out—what’s on your mind about pandemic and the second shift? For those who think it is safer to stay quiet let us hear how that conversation is playing in your head. And for those who don’t really see why the family should be brought into the workplace tell us why not.</td>
</tr>
</tbody>
</table>

Table 5. Role Play Scenario Three—A Day at the Beach

<table>
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<tr>
<th>SCENARIO THREE</th>
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| All the families in Second Shift are invited for a reunion—we’re going on a post-pandemic camping trip to the beach!! Everyone arrives in separate cars and after much effort and many mishaps a small cluster of tents has been pitched and folding chairs arranged around the fire pit for an evening bonfire. As the sun is going down, the group decides to split in two:  
- One group takes charge of dinner duty which includes food prep and grilling  
- A second group gathers the kids (and dogs) for a short hike to the beach for some frisbee and futbol on the sand  

The adults in both groups quickly catch up and turn to everyone’s favorite topic of the moment—how wonderful it is that the pandemic has ended and a vaccine has been successfully delivered around the world. All agree that it is good to be outside again and to have social contact with others. While they share tales of being housebound and swipe through pandemic photos on their I-phones the conversation turns to the second shift. All agree that from what they hear the pandemic exacerbated the burdens of the second shift for many of their friends and family members. Why are the adults in this group not surprised? How did the second shift collide with the pandemic in their own households? What advice do they have for each other? |

Following this line of inquiry, the final student VoiceThread project I will discuss below, a virtual social protest, evidences the idea that “a sound social space is manifest if, among other things, group members trust each other and if group cohesion, a sense of community, and an open atmosphere exist amongst the members.”

5. Protest and pandemic

A literature course on the Harlem Renaissance proved equally challenging but no less inspiring during pandemic. The course was a hybrid/remote model, with a synchronous face-to-face meeting via Zoom on Thursdays and asynchronous work done in Blackboard discussion forum. Students would be assigned VoiceThread work for final projects. Thursday Zoom sessions were typically discussion based classes with breakout room small group hands-on-activity used to prepare students as recorders and reporters responsible for guiding and contributing to whole class discussions.

The students had been walking through the end of the era of slavery and reconstruction and into the Jim Crow period of U.S. history (late 19th and early 20th century) when real life ripped from the headlines intruded into the space of the syllabus. On the day of class, in the week of George Floyd’s murder in the United States (see Figure 4), I arrived at a point familiar to many teachers of color—do I soldier...
on with what I prepared for class? Wall off emotion from intellect? Do I breach that line between the personal and professional? Can I make it through class without crying? While the course syllabus was exactly at a point where we were considering the extreme violence of lynching in America, live televised and social media coverage of a present day killing was disturbing to say the least.

I rattled through the zoom roll call, asking each student “How are you doing this week?” and “How is your family?” but before I could shift to my customary “Any questions?” L, the top student in the class, asked if we could discuss what had happened. Anticipating (hoping?) that students would arrive at connections and conclusions themselves, I had prepared a lesson about the summer of 1917 when the NAACP (National Association for the Advancement of Colored People) sponsored a march—The Silent Protest—as a response to lynching and racial violence (see Figure 5). The protest was announced in fliers with a question—Why do we march—which was followed by an evidence list itemized as reasons: We march because. Using VoiceThread, I had created a space with a mini lecture and supporting materials: archival documents, photos (protest flyers, protesters and placards) as well as audio (speeches) to bring the students into the space of the 1917 protest at 42nd Street and Fifth Avenue in Manhattan.

My challenge to the students this day: work in small groups with VoiceThread to create their own Silent Protests linking them to current on-going protests. Show that you understand contemporary responses to the question: Why do we march? Update the NAACP’s statement: We march because. Create a virtual space where you can join the world (see Figure 6).

The VoiceThreads that students produced blew me away with creations that were full of history and knowledge, facts and figures, anger and resolve. They touched inequities that shaped their own lives as children of migrants from Palestine, Egypt, Tunisia and Morocco. One team included a mural in memory of George Floyd painted on a piece of rubble in a tucked away corner of war-torn Syria (see Figure 7).

Another group incorporated a grainy black and white image of Bloody Sunday Selma stretching the Black Lives Matter protests back to the 1960s Civil Rights era. Along with hip-hop music and #slogans they challenged each other with questions of their own: Why does this keep happening? What can we do? and answered each other with names of social justice organizations, links to websites and reminders about a range of global injustices from human trafficking to climate crisis. Their slides incorporated so many forms and
sources of text and reading: walls, cardboard signs, t-shirts, banners, murals, Covid masks, i-phone screens and social media. My text and audio feedback included links to NGO reports and news commentary to keep these conversations going. We returned to the VoiceThreads many times later in the semester as the past and present continued to collide in our explorations of the Harlem Renaissance.

There are some days when class simply cannot be ordinary. The best laid plans will go awry. This will always hold true the more closely our subjects touch on the realities of the world: gender inequities, social injustices, public health challenges, racial justice and more. As the suddenness of the pandemic has shown us, we can turn the ordinary into extraordinary. With flexible adaptations that make our teaching experiences and learning opportunities more interactive and creative, students can take charge of the business of their learning. In the week(s) of the protests against the murder of George Floyd I could see and hear that my students needed to raise their voices, joining others in a global moment of outrage and indignation. What seemed to matter most at that moment was that their education had purpose. For the ICLT 300 Community of Inquiry in the summer of 2020 this was a defining moment. VoiceThread technology helped them connect themselves to a present and past that was not limited by time or space.

6. A final note

A final note: Both courses that I have discussed in this paper, ICBS 300 and ICLT 300, are among upper division seminars that NYIT students can select. Since 2010 when NYIT introduced its Discovery Core Curriculum for the 21st Century, undergraduate students in all majors incorporate a 12-course complement of foundations courses in critical thinking, the scientific process, writing, and effective speaking and professional communication. Year three and year four students enroll in focused seminars across a variety of disciplines: Behavioral Science, Literature, Philosophy, Social Science. The “Core” as it is known, has seven learning outcomes:

1. Communication
2. Literacy
3. Critical/Analytical Thinking
4. Interdisciplinary Mindset and Skills
5. Ethical/Moral and Civic Engagement
6. Global Perspective
7. The Process and Nature of the Arts and Sciences
Along with the intention of establishing Communities of Inquiry and being equally mindful about how to integrate the synchronous and asynchronous aspects of the two summer courses, both ICBS 300: The Sociological Imagination and ICLT 300: Reading the Harlem Renaissance were solidly grounded in the seven outcomes of mindset and skills that define the CORE curriculum.

I would like to believe that these are three areas of concern that outlive the pandemic and that conversations will continue about how we teach and where (whether online, in a classroom or somewhere in between). In the end, education will always be facing brave new worlds we have yet to encounter. As we contemplate the tools and technologies we choose for our teaching it is important to distinguish the means and ends. Through carefully designed projects with technologies of the moment I believe we are able to place the processes of inquiry, creativity and collaboration in the hands of our students.

References


About the author

Dr. Monique Taylor is Campus Dean and Executive Director of New York Institute of Technology’s Abu Dhabi Campus. Monique Taylor is a sociologist by training with undergraduate and graduate degrees from Yale and Harvard. Her research, teaching, and public speaking stretches from race, inequality, and urban studies to film, food, and pop culture. For the past 18 years, she has lived and worked in the Middle East, Latin America, and Asia.

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Perceptions of teachers on teaching and learning with mobile devices in higher education classrooms in Oman: A pilot study

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Abstract

Mobile learning is a new educational paradigm. The use of mobile technology is popular on a global scale among students of higher learning. Mobile handheld devices have emerged as a learning tool for teachers and students in higher education classrooms. Nevertheless, the impact of mobile technology on learners has been an area of concern to teachers and administrators. The purpose of this pilot study was to explore the perceptions of teachers on the use of mobile devices such as smartphones, iPads, notes and tablets in higher education classrooms. In this pilot study, in-depth one-to-one face-to-face interviews were conducted using semi-structured questionnaires. Limitations included the relatively small number of participants and restriction to only one of the many higher education institutions in Oman. The findings of this pilot study indicated that these technological tools can be potentially beneficial to the educational sector in the future and that more research should be conducted in the future in which a greater number of interviewees are sampled from more education institutions in Oman.
1. Introduction

Mobile devices are handheld modern electronic gadgets such as smart telephones, iPads, notebooks and tablets. In the modern world, mobile devices are an integral part of the lives of a majority of university students of the millennium generation. Mobile technology has become pervasive and powerful, offering teachers a valuable tool to assist in teaching (MacCallum, 2010). The rapid progress of mobile technology has resulted in learning becoming more and more accessible, and has provided teachers with new avenues to augment learning both inside and outside the classroom. Mobile technology is an amalgamation of a vast number of applications and tools that can enhance learning to be both dynamic and effective, so that students are no longer tied to their desks to communicate and can also experiment with objects of learning. The integration of mobile technology into learning and teaching is expected to have huge impact on the performance and experience of learners (Hammond et al., 2011). However, questions surrounding if the teachers accept this technology in the classroom setting have had a significant impact on the successful implementation of mobile learning. Students are capable of using mobile technology to assist informal learning, but without the acceptance and support of teachers it is unlikely to be integrated completely into much formal learning (Sang et al., 2010).

Research studies indicate that the use of mobile technologies in education has contributed towards greater efficacy in learning, developed assistance for personal growth, and larger exposure to technology and better communication (Sharples, 2013). While designing m-learning environments, it is essential to emphasize the role of the teacher who is an essential part of the process of learning, who creates the learning surroundings and controls it to some degree, thereby enhancing guided reflection. Teachers who became popular utilizing their mobile devices developed a better understanding of how activities of m-learning could be incorporated and implemented into schools and universities (Aubusson, Schuck & Burden, 2009). Realization of the importance of mobile phones for education might develop the quality of learning and teaching. Teachers must be encouraged and adequately trained to deliver m-learning courses in blended learning environments (Chen et al., 2010).

The adoption of m-learning is still in its developmental stage within learning and teaching processes in Oman, and teachers must be given an opportunity to voice their perspectives towards the adoption of mobile technology in classroom teaching. Therefore, the research question asks, “What are the perceptions of teachers of teaching and learning with mobile devices in higher education classrooms in Oman?”

2. Background

While it is generally accepted that technology should be an integral part of the learning process in Oman higher education sectors today, there is evidence that technologies still remain peripheral to the main work conducted in many Oman institutions. The Oman Higher Education Curriculum in its current form emphasizes inherent capabilities required for learning in the 21st century. This has meant a number of higher education sectors in Oman have adopted the technological route, primarily in terms of improving networking and mobile devices. Earlier research into this area has indicated that there is an underutilization of technology in the field of higher education in Oman. This research analyses the perceptions of teachers in Oman’s higher education sector in the light of the increasing ubiquity of technologies. The main aim of the study is to identify the perceptions and perspectives of teachers when utilizing mobile devices within higher education classrooms in Oman.

3. Literature review

3.1 Teachers’ views

Mobile telephone use during class time has received more criticism than support from teachers (Wei & Leung, 1999). Proponents of mobile technology argue that it places exponentially high valuable data in the hands of the students in real time and that it can improve the efficient transfer of lecture materials to students. The utilization of mobile devices is validated as they enable easier communication, better organisation and access to the internet thereby better connecting students to their families, friends and teachers (Katze, 2005; Mifsud, 2003). While these devices are computers with ease of access and higher portability properties in terms of reduced weight and size (Prensky, 2004), critics argue that mobile gadgets are largely distractive and can be used as tools to cheat during examinations (Katze, 2005).

3.1.1 Studies on teacher perceptions

Given the prevalence of mobile devices in our daily lives and their appeal as educational instruments, it is essential to understand the perspectives of teachers with regards to mobile technology and its feasible integration into teaching, (McCallum & Jeffrey, 2009). This pilot study is aimed at
Their study predicted that perceived usefulness, anxiety, to trust and the necessary skills to use digital technology influence teacher adoption of technology, namely pertaining to mobile technology within the learning environment has hindered the possibilities for mobile learning trials. The purpose of their study was to evaluate the adoption and use of mobile technology by teachers in a business school (Boughzala, 2012). The teacher respondents offered insights about mobile learning opportunities such as interactive surroundings, availability, and daily activities’ inclusion and enhanced communication. The respondents further identified that teaching practices must be adapted to create interactive activities and to motivate reflection with a timely feedback; such driven by the threat posed by institutional, technological, individual and pedagogical barriers that threaten mobile learning practices. Their study noted that integrating mobile devices, new technology and new resource platforms at institutions are expected to develop learning outcomes resulting in better collaboration, availability and ubiquitous features.

Another study looked at whether teachers’ acceptance of technology could impact their readiness for the pedagogical use of mobile phone technology in schools, yet it is questionable if teachers are ready to use mobile phones in learning and teaching (Ismail et al., 2013). However, the study recognized an essential correlation between respondents’ motivation and awareness of technology with their readiness for pedagogical use of mobile phones. It can be inferred from their study that mobile technology is considered essential for future education, albeit the slow uptake in teacher adaptation to this mobile technology in schools.

While there is an increased awareness that these technologies may be beneficial to learning and teaching, factors that determine the acceptance of mobile technology by teachers have been restricted (MacCallum, 2014). There is a new model that expands the Technology Acceptance Model (TAM) with three new variables namely ‘Information and Communication Technology’ teaching self-efficacy, digital literacy and anxiety (MacCallum, Jeffrey & Kinshuk, 2014). Yet, their study revealed that a large number of teachers still resisted the integration of technology into the classroom. Two perspectives have been predicted consistently to influence teacher adoption of technology, namely pertaining to trust and the necessary skills to use digital technology. Their study predicted that perceived usefulness, anxiety, digital literacy and self-efficacy of teachers were essential factors in guiding the behavioral intentions of teachers to use mobile learning. One serious issue which concerns teachers is classroom distractions due to the misuse of students’ mobile phones, this in different higher education institutions in Oman (Shrivastava, Shrivastava & Muscat, 2014).

3.2 Mobile devices as aids

Mobile technology has evolved and so have teachers’ attitudes as this technology can deliver learning content in a variety of ways (Hartnell, Young & Vetere, 2008). This evolution is instrumental in ensuring that lessons are learner-centered, authentic and different from the more traditional approaches to instruction; such technological evolution can be leveraged to assess and reflect students’ performance levels (Markett et al., 2006). Portability of mobile gadgets allows access to the course material anywhere and at any time for both the learner and the instructor thereby enabling socialization between them; such an interactive relationship is an excellent source of motivation (Markett et al., 2006). From the learners’ perspective, use of mobile devices allows them to enact a variety of tasks simultaneously including easy access to course content and internet research while still in communication with peers and seniors (Lu, 2008). In addition, most mobile devices incorporate certain features that support instruction. For example, texting can support numerous applications that can be used for classroom instruction and interaction between staff and students, including student performance assessment (Whattananarong, 2006). Comparisons were conducted between two groups of students, the control group who sat for their examinations in the conventional way and the other group who used mobile devices, yet the examination results for the two groups were the same. Moreover, text messaging can be utilized as a tool for inquiry and a teacher’s mode of delivering instructions.

Mobile technology can be leveraged to quantify information and use teacher podcasts incorporating learning materials to allow students to study them pre and post the lesson or can permit flipped teaching (reverse instruction) that is a revolutionary form of blended teaching. Essentially, flipped classroom redirects instruction to a learner-centered model thereby allowing more time to be allocated to explore new topics more comprehensively and create meaningful learning opportunities; this while initially students are introduced to such topics outside of the classroom setting. This enables teachers to spend considerably more time in a two-way interaction with students as opposed to just lecturing (Pierce, 2013). Both podcasts and flipped approaches are known to increase motivation, writing and listening.
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skills, while retaining ownership and meaningfulness of the learned content (Dlott, 2007). Mostly, the materials created for podcasts and flipped platforms are aimed at augmenting classroom instruction. Finally, podcasts play a fundamental role in differentiating instructions in an appealing way, enhanced through audio and visual aids that re-emphasize classroom learning. This is important in instructing those students burdened by language difficulties or those with special cognitive needs (Molina, 2006).

Studies reveal that educators are concerned that the short format used in text messaging is impacting negatively on writing skills in the form of abbreviated language and slang thereby inhibiting the students' ability to speak and write using appropriate grammar. On the contrary, results of a study examining the writing skills of teenagers showed that those who texted more often were able to write more and had better writing and spelling skills than their peers who texted half as much (Plester, Wood, & Bell, 2008).

3.3 Mobile devices as obstacles

3.3.1 Mobile devices as distractors

Students who spent a lot of class time texting were often distracted because they were likely to pay little or no attention in class (Tindell & Bohlander, 2012). More than 90% of teacher participants expressed concerns that such students were likely to score poorly in impromptu tests after class. It was found that both teachers and learners got irritated and distracted by the ringing of mobile devices during lessons (Campbell, 2006). Moreover, most teachers and students in Oman supported restrictive policies to keep the use of mobile devices under control, especially during lectures. In a study of the use of mobile devices belonging to 1,300 college students, it was found that nearly every text message was responded to, indicating that it is difficult for students to ignore text messages (Burns & Lohenry, 2010).

In an Oman study, most students in Muscat and Sohar enacted less than 10 phone calls a day but wrote or received more than twice the number of text messages Belwal & Belwal (2009). Moreover, more than half of the study population did not feel comfortable when they did not carry their mobile devices around or when they were switched off for a period of more than one day. This was because mobile gadgets are equipped with features and applications that are highly compatible with students’ daily activities. Similar studies from Norway, China, and Korea, have shown similar dependence on mobile devices among learners globally (Katz, 2005).

Mobile technology was highly attributable to time wastage and drain on monetary resources for most students in The Islamic University of Bahawalpur, Bahawalnagar Campus, Pakistan (Javid, Malik & Gujjar, 2011). There is a positive correlation between text-messaging during class time and reduced academic grades as well as difficulties in remembering disrupted lecture presentations Aamri & Suleiman (2011). Poor academic performance was associated with the considerable amount of time sending and replying to messages instead of focusing on lectures.

3.3.2 Mobile devices as aids for cheating

Learners sometimes cheat during examinations as most students are extremely proficient in texting without necessarily looking at the screen which enables them to quickly share content on questions (Gerard, 2006). Mobile devices can be used to violate the privacy of both other learners and teachers. For example, video-recording other students or teachers with malicious intentions of posting demeaning video clips in public forums such as YouTube. Another study revealed that one-third of high school students use their digital devices in cheating during tests and examinations (Common Sense Media, 2010).

3.4 Purpose of the study

The purpose of this study is to understand how Oman teachers in a specific higher education setting are adopting mobile learning in classrooms; such understanding can pave the way for implementing mobile learning in higher education classrooms in Oman successfully in the near future. Currently, most of academic management and teachers do not allow mobile devices in classrooms due in part to earlier stated issues. Yet there are various types of mobile devices that have the ability to support classroom activities. Therefore, despite these issues (Bär et al., 2005; Geist, 2011; Milrad & Spikol, 2007). Through this analysis of existing studies, this study plans via qualitatively testing a random sample group of teachers from one of the higher education institutions to ascertain how Oman teachers can embrace and utilize mobile device technology.

4. Methodology and methods

4.1 Methodology

A phenomenographic approach was used to explore the perceptions of teachers about the use of mobile devices in higher education classrooms. Phenomenography is a subjective examination approach entailing qualitative research.
which involves an interpretivist model for analysis (Akerlind, 2005). In particular, it investigates the differences of people’s experiences and relates their thinking and perspective to a subject to identify the clear notion/concept pertaining to the subject. Phenomenographic research is based on information and thus its ontological assumptions are epistemological in context (Bowden, 2005). Phenomenography understands the response of the participants from different perspectives, taking into consideration the social phenomenon of nature (Hitchcock, 2006). According to the social phenomenon of nature, the responses of the individuals are influenced by different behaviors, feelings and experiences from past (Babbie, 2015). This pilot study explores the experiences and thoughts of teachers when using mobile technology for the purposes of teaching in higher education classrooms.

Seven English and Mathematics teachers from a higher education institution in Oman known as the Foundation Program of the Health Institutions were randomly sampled for the pilot study, with varying teaching experiences, age groups, genders, and different backgrounds. Interviews, each lasting about 45 minutes, were conducted using semi-structured open-ended questions such as, “What are the perceptions of teachers on teaching and learning with mobile devices in higher education classrooms in Oman?”

The question is centered on the teachers’ perception of utilizing the mobile devices in Oman classrooms as a tool of modification of the education system. Thus, a qualitative approach was adopted to clearly understand the opinions, feelings and experiences of the seven teachers in a manner that depicts the social phenomena naturally. Qualitative research allows understanding of the holistic approach by looking into different variables to derive at a conclusive point through critical inductive analysis (Babbie, 2001). Also, qualitative research data help us to understand the concepts and develop theories through an inductive approach. However, special care was taken into consideration for clearly presenting the teachers’ points of view without any manipulation of data or researcher bias.

The research was designed, carried out and analyzed as a part of the doctoral program in Oman where the researcher utilized Merriam (1998) as a major reference of the descriptive study. The study was conducted carefully, so iterations, revisions and consensus were critically understood during the process of determining the findings and analysis.

4.2 Data collection

Since the study is expected to understand the teachers’ concepts and perceptions of utilizing the mobile devices in the classroom, the appropriate method of data collection was to provide the opportunity to gain insights directly from the participants. Thus, a primary interview research methodology was adopted for collecting the data and a semi-structured open-ended questionnaire was prepared for the interview (Babbie, 2001). This approach was flexible in design, to allow for questions to be added or even asking countering questions as a means for the researcher to clarify and understand the teachers’ conceptual understanding and perceptions. In order to ascertain if the interviews would proceed as anticipated, the researcher tested the questionnaire on different individuals before interviewing the actual seven participants. These teachers were interviewed face-to-face through a trustworthy questionnaire structure so that the natural flow of information was relevant to the study. All the interviews were first recorded and then transcribed to ensure subsequent accurate and reliable inductive analysis. The interviews were recorded to ensure that the data collection was valid, authentic and could be reflected upon. Recording enables the researcher to concentrate on listening instead of taking notes, allows better communication with limited distractions and reduces the possibility of the researcher being too subjective or biased. Moreover, the participants feel confident as it allows them an opportunity to go back, review and reflect on the collected qualitative data (Bryman & Burgess, 1999).

4.3 Data analysis

Data analysis is a crucial step of the research as it leads to clear findings and provides an overview and approach to answer the research questions. It is very important to select an appropriate analytical tool that resonates with the idea of both the research and research questions. For this research, an inductive analytical approach was adopted in order to assess the qualitative data. The data was categorized into a thematic format (Bryman & Burgess, 1999). Themes were developed by extracting the data from the interviews in a sequential manner and participants were asked to edit or add comments to each theme as and when appropriate, and to clearly represent his/her point of view without any distortion of the meaning of the collected data.

The data was individually coded for inductive analysis in a categorically thematic manner. Meyer and Avery’s (2009) approach of analysis was adopted for the purpose. Spreadsheets were used to categorize participant comments into themes and single sentence analysis as per example shown in Appendix 1.
4.4 Trustworthiness and credibility

To ensure the credibility and trustworthiness of the data analysis, typical strategies were adopted to ensure that the data findings were in accordance with the participants' views. The teachers were invited to verify if the findings reflected their personal opinions and experiences.

5. Findings and analysis

The following findings are categorized into six themes as follows:

5.1 Theme 1: Mobile devices as a medium of instruction in classrooms

The teacher participants have different opinions about the utilization of the mobile devices which depended on their perception of analyzing the benefits against the constraints. However, most of the teachers (5 out of 7) voiced the opinion that utilizing mobile devices would benefit academic learning; as shown in Figure 1. One of the participants commented:

“The students can look at the information on the internet; because of this research skill which they can do in the classroom it is going to improve their critical thinking skills and their proficiency as well, and digital literacy can be ensured because it makes a very powerful impact on the students”

Figure 1. Mobile phone usage behavior of university students in Oman. Based on Belwal & Belwal (2009)

Other teachers who agreed to the fact that mobile devices should be used in the classroom considered this methodology as it allows more involvement of students in an interactive approach of learning in which they feel more involved within the classroom setting.

None of the teachers, however, neglected the woes the technological gadgets bring into the classroom. These problems are varied from distraction to irrelevant, non-productive activities in class, which is difficult for the teacher to monitor, as one of the participants noted:

“Though we are trying our level best to making students into using all these kinds of technologies, I still feel the students are not to the mark. They know how to use this technology in other ways. WhatsApp, then, and you’ll find they’ll be taking your photo, they’ll be doing so many other things in-between, and whiling away the time. It’s not easy to monitor all of them because they may be keeping it on the table while you’re looking at one phone or one of the devices. Maybe they’re doing something else, somebody else at the back. Whereas, if it’s with no devices in class, you’ll find all the 32 - or 42 or 48, or whatever number - eyes on you and you can concentrate”

Introducing mobile technology into the classroom would be conducted via transferring learning from the central fountain of knowledge (the teacher), to mobile devices, which would lead to lesser interaction and communication between teachers and students. This would cause students to feel isolated and then become engrossed with their mobile devices to counter their feeling of isolation. Two participants, however, did not recommend implementing this strategy in Oman classrooms.

5.2 Theme 2: Teachers’ training for implementing mobile devices

All the respondents exhibited interest and motivation over learning about new techniques and methods of teaching using mobile devices. However, they discussed various constraints. One of the participants said:

“It may not be a very rosy picture when I have to respond to that kind of question, because I do know there will be reluctance – partly because, maybe, people are always hesitant or inhibited when it comes to change – but I think if you make it mandatory, or you can even think of giving incentives for teachers who have undergone training; these are different methods of trying to make it more popular among teachers”
Another participant who was not willing to implement mobile devices in Oman’s classroom system also showed willingness to be trained, as learning is a continuous process and everyone should learn regardless of the extent of benefits. Such training might open new horizons of thinking and change people’s perspectives. Regarding the question pertaining to seeking training for the utilizing of mobile devices in the classroom, one respondent said:

“Yes, very much. I’ll be for it because … If we have the training to do so, there is a chance; I would like to do it. Then, maybe I could have a better perspective about which is better, and you could compare.”

5.3 Theme 3: Classroom lesson plans

The implementation of mobile devices as a source of an educational tool will demand different aspects of lesson plans from teachers. Three participants said the use of such technology depended on the topic, subject and lecture they were intended to assist, and one said:

“In the classrooms … using mobile phones you’d have to design, what shall I say, a lesson with the mobile phone …. The lessons can be varied, and it depends on the lesson what we are trying to…”

On the other hand, the majority of the participants were certain about a different kind of lesson plan and were of the view that implementing new smart learning would promote active learning in the classroom and there must be a new lesson plan for each lesson. Learning through mobile phone technology is totally different from traditional approaches of learning via authorized pre-text books. Also, the flow and availability of information is huge from websites which may distract individuals from the authenticity of the data; thus, teachers will have to cite the website correctly in a manner that preserves the authenticity of the information given.

“One of course, the lesson plans will be different because I need to cite the websites, I have to call upon the attention of the students to go and reference so many of the things; it will be entirely different. Now I have a prescribed text, a prescribed curriculum, and the exams are based only on that, so when mobile apps are going to be used, mobile devices are going to be used, of course it is going to be a wide range; the range is going to be wide and in that case, my lesson preparation will be different.”

Thus, most of the participants considered a different kind of lesson plan for implementing mobile technology, yet in some lessons the teacher should continue with the same lesson plan for effective learning.

5.4 Theme 4: Technologically updated classrooms

The implementation of mobile devices as a learning tool is not an easy step. Most of the respondents saw huge hurdles hindering the transfer of effective implementation. The different concerns of the teachers were the cost of the mobile devices, ensuring devices which all the students could integrate, the availability of the internet in the classrooms, and the restriction of access of social websites like WhatsApp, Facebook, YouTube, and Twitter within the classroom setting.

“There are several challenges that I foresee in making use of mobile devices in classrooms, mainly because, first of all, it is quite expensive, and secondly I do know about the internet connectivity – because sometimes, at least in Oman, when many people are using it maybe the connectivity is not that good”

Another concern of a teacher was the backup plan or troubleshooting.

“… technical problems; we have to have a backup plan, a technician should always be around, and we should be on our heels otherwise it is very difficult. And the teacher also … should have … the full range of mobile device capability, she should be aware of all that. So, she should be given a very efficient course which she has to undergo first to handle the lessons in a very efficient way.”

5.5 Theme 5: Teacher’s role in the classroom

The teacher is the central fountain of knowledge in the traditional education system. The use of mobile devices would alter this student dependence on teacher. Most of the participants disagreed about the changing role of the teacher.

Two participants said:

“No, the teacher’s role is always a facilitator. She or he should always be there to help the students. So even if they’re doing…like, if you’re saying if it is a change – if it’s a change, the teacher should always be there as a teacher. The student should always be able to approach her or him with any doubts and the teacher should be well versed with both sides”

Another participant was of the viewpoint that these advancements would help the teacher to learn from new
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technologies and thereby derive a positive feeling of transferring the students into their future by utilizing modern and advanced technologies.

5.6 Theme 6: Ethical concerns

One of the important factors of consideration was the environmental and behavioral challenges while implementing any change in a system. In this regard, ethical and community concerns of the educational system are of vital importance. Oman is a culturally rich Arab country with a developing modern educational system. When the teachers were asked about the adoption of mobile technology within the system, one major problem that came across was the noncompliance by students during examinations and students taking advantage of the internet access so as to engage in unethical examination practices:

“...there are some disadvantages, so we have to monitor closely how we are using the phones. We cannot give total freedom keeping the phone with them, right, because in the exam say, for example, we are taking the phone away from them …”

On the other hand, most of the participants were of the view that these concerns could be adequately tackled with appropriate and effective planning that would lead to consistent execution of the new approach of learning in a holistic manner.

6. Discussion

Some of the challenges raised here can be negated through training, ensuring preparation and delivery of the appropriate content to the students (Mifsud, 2003). Training students how to make use of the gadgets will reduce the stress levels because some are not comfortable with computer-based examinations. If such a student approaches a teacher who is unable to help, it becomes an enormous problem. Some teachers, however, hold the belief that no amount of training can help the teachers deliver because they feel adaptation takes a much longer time to sink in. The teaching skills need to be practiced for a very long time before an individual gains adaptation skills (Mifsud, 2003). The teachers have a negative attitude because most training sessions do not last for long. They are usually carried out for a week, a month, three months or even six, but still they may not be sufficient enough to enable the teachers to translate the theoretical knowledge obtained from the training into practice. This is likely to result in the teachers’ reluctance in applying the newly gained skills to use at the point of intervention within the classroom setting (Mifsud, 2003).

With respect to the possible change of teachers’ roles, most teachers feel that the teacher still retains his or her role as a facilitator. They would have to take control of the class and ensure that students remain focused on the content that needs to be covered, and monitor students’ behaviour (Ismail et al., 2013). As discussed previously, students may be tempted to misuse the features of mobile devices in taking pictures and videos of teachers and peers with malicious intentions (Wei et al., 1999). It would be the teachers’ role to ensure that this malicious habit is kept under control and they would need to anticipate misuse of both data and technology, due in part because of the versatility of the internet. Teachers would have to be several steps ahead of their students because they would need to inspire confidence and prowess in their students as they begin to adapt and engage in the lessons. As such, the teachers need to be even more approachable and flexible because the system would be new and, during the first stages, students who have never used gadgets would be likely to experience difficulties that may require the teachers’ attention and guidance (Sang et al., 2010). Only well-trained and motivated teachers who are knowledgeable concerning the application of such technology within the classroom would be able to adequately address students’ concerns. The teachers would need to make available their contact details so as to be approachable both physically and in absentia via the internet. Students should be able to feel and believe, ‘yes, the teacher knows more’. In other words, the teacher retains the role of a teacher (Sang et al., 2010).

6.1 Limitations

The major limitation of the current research is the limited number of participants. Only seven teachers were interviewed. Another limitation pertains to the perceptions of only those teachers who were located in just one of the several higher education institutions in Oman.

7. Conclusion and recommendations

The study found that the teachers were apprehensive about the application of mobile technology within the education setting. While there are many positive aspects pertaining to the application of this technology within the higher learning classroom such as its ease, speed and convenience of use in terms of improved ability to conduct research, it would seem that many education professionals perceived that the introduction of such technology could
move the focus from scholastic goals. It is recommended that further studies should be conducted into the impact of such technologies into the higher learning classroom using a higher number of interviewees and also selecting samples which represent a variety of high learning institutions. It is recommended that this pilot study be used to conduct a number of case studies using mixed methods of research, namely a combination of both qualitative and quantitative research methodologies.

8. Personal reflection

The study met with some impediments during the data collection stage due to which the survey questionnaire - which was planned in addition to the interviews – had to be shelved. This was an unforeseen event that caused a major setback to data collection as well as a cause of personal and professional distress and disappointment to the researcher; such validating the above recommendation that future research should use these findings to conduct further studies.

References


High school students’ experience of a 3D printing station at a bilingual school makerspace in Kuwait

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Abstract

In recent years, three-dimensional (3D) printing has become more accessible to school makerspaces (places for making projects using different tools), as prices are dropping and more schools are becoming able to afford 3D printers. Schools in Kuwait need evidence that 3D printing aids education in order to justify purchasing more 3D printers and provide teachers with training to find ways to integrate it into their curricula. This qualitative case study examines 3D printing and the users of this technology so as to better understand 3D printing’s impact on education. It presents the results of a survey asking high school students about the skills they developed during 3D printing projects and field notes collected in a 3D printing station in a school makerspace. I employed two theoretical models to frame this study and enrich the discussion: a 21st-century learning framework and the Dynamic Decision-Making Model. Participants reported that they developed a number of skills during their 3D projects, such as collaboration, communication and technology. Moreover, the author also found a lack of connection between this kind of technology and its instructional value. The issue which was found in this research is that many users of the above-mentioned technology face problems with it because it is still under development.
1. 3D Printing as a New Technology in Schools

3D printing technology is gaining momentum all over the world in different sectors. Several countries in the Middle East have started to look for ways to integrate this technology to meet the needs of the future. For Example, Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of UAE and Ruler of Dubai, launched the Dubai 3D printing strategy to utilise this technology ‘for the service of humanity and promote the status of the UAE and Dubai as a leading hub of 3D printing technology by the year 2030’ (The promise of 3D printing, 2018, p.1). The first makerspace, the Sabah Al-Ahmad Centre for Giftedness and Creativity (SACGC), was created in Kuwait in 2010 to support talented and gifted people. This makerspace contains a 3D printing lab to support inventors to implement their ideas.

The use of 3D objects in education offers many possibilities for understanding and exploring concepts (Liziero & Basniak, 2019). For example, 3D printing can enhance successful learning experiences and bring lessons to life for kinaesthetic and visual learning (Ford & Minshull, 2019). Furthermore, 3D printing has the potential to support learning by providing exciting experiences. This study investigates how 3D printing can help a K-12 curriculum meet the needs of today’s 21st-century learners and help them prepare them for the future.

Following the introduction of low-cost 3D printers, many educators argued about the efficacy of integrating this technology into education. 3D printing shows promise, but educators need to find value in using it (Steed, 2019) and the value should not be just about printing a model, as opposed to acquiring skills. The integration of 3D printing in education has raised hopes and concerns about how it can be utilised as a tool for learning (Trust & Maloy, 2017). As stated by Novak (2019), evidence suggests that although administrators push the integration of 3D printing in schools, there is a risk that it will be resisted due to many constraints. Consequently, research is required to help educators find ways to integrate 3D printing into education, as there is scarce research in this area (Loy, 2018).

During my work as a makerspace specialist at a bilingual school in Kuwait, I was asked to create a plan to integrate 3D printing into projects that were conducted in the makerspace. After reading prior research and consulting with friends, I chose to buy six XYZ 3D printers: four small printers, one big printer, and a full-colour 3D printer. The teachers were happy with the outcomes as they did not believe initially that they could make anything with this tool. Having a 3D printer was like having a small factory in the school to enable students to achieve their dream through building anything.

While 3D printers can help reshape learning in classroom settings, educators should weigh the costs and challenges of using this new tool (Trust & Maloy, 2017). Cano (2015) found that many teachers do not see the value of 3D printing in education, an attitude shared by some of the faculty at my school. Moreover, students may waste their time by downloading any model and printing it without learning any skills (Hoy, 2013).

This study was born out of my passion as a head of makerspace to expand my makerspace role in teaching and learning. This study can be helpful for teachers and administrators to integrate 3D printing into teaching and learning. Moreover, it can aid makerspace staff in introducing 3D printing labs in their makerspaces.

1.1 Purpose of the Study

As 3D printers have decreased in cost and increased in availability, they have grown more common in some schools in Kuwait as ways to support Science, Technology, Engineering and Mathematics (STEAM) or design technology. Thus, educators need to find ways to utilise 3D printers effectively for education (Flowers, 2019). The purpose of this qualitative study is to investigate whether students using 3D printing in their projects show a significant improvement in 21st-century skills and what problems they might face during 3D printing projects.

1.2 Research Questions

To start examining its role in education, we need to first understand students’ perceptions of 3D printing. Limited research has been conducted on how students perceive 3D printing stations in makerspaces. To address this deficit, the present paper attempts to evaluate a particular 3D printing station in a school makerspace by asking the following question:

• ‘How do high school students perceive a 3D printing station in a makerspace?’

Sub-questions of the study include the following:

1. What skills can students learn when they use a 3D printing station in a makerspace?
2. What are the challenges related to using a 3D printing station in a makerspace?
2. Literature Review

This literature review was conducted to ensure a thorough examination of research on 3D printing in education, since the issue is new to schools in Kuwait. The first topic of research is the Maker Movement and makerspaces. The second topic is 3D printing in schools and how educators can use it to prepare students for the future. Finally, the third topic includes previous studies on 3D printing. Using the Qatar National Library database, peer-reviewed scholarly journal articles published between the years 2008 and 2019 have been selected. Recently published books have also been selected. I used the following search terms in various combinations: 3D printing in schools, 3D printing in makerspaces and 3D printing in education.

2.1 The Maker Movement, Makerspaces and Design Thinking

3D printing is connected with the Maker Movement, makerspaces and designing thinking. While makerspaces are the physical places for 3D printing, design thinking is the method for making 3D printing projects. The Swiss psychologist Jean Piaget combined many ideas of Dewey, Montessori, Froebel and Pestalozzi with his theory of constructivism. Learners construct knowledge inside their heads based on their experience using an internal process of sense-making. Seymour Papert, who is considered to be the father of the Maker Movement, developed Piaget’s theory to form another theory called constructionism (Martinez & Stager, 2013). Papert’s theory of constructionism expands Piaget’s constructivism to include learning in a physical activity that ends in a shareable final product or ‘model’ (Martinez & Stage, 2013). Papert’s theory of constructionism, which focuses on constructing knowledge through the act of making, paved the way for the Maker Movement.

The Maker Movement started with digital software and technologies and online communities intending to change the way people engaged in traditional hobbies and artistic endeavours such as arts, crafts, woodworking, tinkering, metalworking, and electronics (Martin, 2015). It began after the publication of Make magazine in 2005 and the first Maker Faire in 2006 (Hatch, 2014). As the movement has grown, makers have been creating physical locations called fab labs or makerspaces in learning environments such as universities, libraries, museums, art studios, tech shops, and K-12 classrooms. Research on making as a learning process for design-based approaches in subjects such as science, technology, engineering, art and music (STEAM) education is growing every month (Lacy, 2016).

2.2 3D Printing as a Way of Preparing Students for the Future

According to Papert (1993), learning is the construction or transformation of internal representations. Designing 3D models is an example of this construction model to transform students’ ideas into physical objects via 3D printing. 3D printing presents many opportunities across many subjects and is quickly being integrated into schools (Schwab, 2017, as cited in Novak, 2019). Students in schools will, in a very few years, be starting careers which have not yet taken shape. Gross et al. (2014) suggests that 3D printing is a means by which future endeavours will begin (as cited in Flowers, 2019).

2.3 Previous Studies

In a study by Trust and Maloy (2017), participants mentioned that their students developed a number of skills while working on 3D printing projects. These included proficiency with 3D modelling, creativity, technology literacy, problem-solving, self-directed learning, critical thinking and perseverance. In their study, the authors mentioned a number of challenges that teachers face when using 3D printers in their classrooms. Despite their promising findings, the authors suggested that more in-depth research, such as interviews, should be conducted in order to validate the results.

Furthermore, a study by Sampaio and Martin (2013, as cited in Formiga, De Araujo, & Santos, 2019) was conducted with eight elementary students. The students worked in groups to create chains using Tinkercad software to import ready-designed 3D models. Findings suggested that the students found the software easy and fun to use but teachers found it difficult to understand. Other studies revealed that teachers and students need training in 3D designing and 3D printing. In the same vein, Posch and Fitpatrick (2012) showed that some of the students faced difficulties while engaging in 3D printing activities.

In another study by Novak and Wisdom (2018), which examined the effects of 3D printing project-based learning on preservice elementary teachers’ science attitudes, the authors engaged teachers in a 3D printing science project on why things float or sink, demonstrated using 3D printed boats. The authors explored how collaborative 3D printing inquiry-based learning experiences affected preservice teachers’ science teaching self-efficacy beliefs, anxiety
towards teaching science and interest in science. Novak and Wisdom’s (2018) findings stress the importance of preparing teachers prior to implementing 3D printing in schools. In summary, limited research has been conducted in schools. Moreover, previous research (Miyasaka & Fabrício, 2015, as cited in Formiga, De Araujo, & Santos, 2019) focused on the use of 3D printing in learning and the role of 3D printing as an accessible tool for learners in making 3D models (Loy, 2018).

2.4 The Need for This Study

Although educational researchers have posited that the maker movement could contribute positively to education (Bevan et al., 2020), a close examination of learning through making is necessary for integrating it into a given school system (Halverson & Sheridan, 2014). Aside from a few 3D printing studies from other countries (Schnedeker, 2015; Kostakis, Niaros, & Giotitsas, 2015), no previous research has been done to explore the impact of the 3D printing on learning in Kuwait or other Middle Eastern countries. Consequently, I intend to fill this literature gap by performing a qualitative study that differs from previous studies in two ways: first, listening to students’ voices, which are sometimes overlooked in research, and second, using multiple tools for data collection.

3. Conceptual Models

3.1 21st-Century Learning Framework

This qualitative case study used a 21st-century learning framework to guide the discussion. 21st-century learning largely refers to deeper learning competencies such as innovation, digital literacy and problem-solving, which are necessary to prepare learners for the future. This means that students must also be competent communicators, creators, critical thinkers, and collaborators (the four Cs) (Battelle for Kids, 2020).


Figure 1. Framework for 21st-century learning (2021)

The framework for 21st-century learning has been chosen to frame my discussion because the Partnership for 21st Century Learning recommended including 21st-century themes and the four Cs in education in teaching and learning. Including these themes and the four Cs can help students develop a global cultural understanding and skills competencies for the future. In addition, the four Cs can distinguish students who are prepared for future jobs from those who are not (Bridge, 2019).

3.2 Dynamic Decision-Making Model

Researchers and scholars have put forth a number of models to explain technology integration such as the Substitution Augmentation Modification Redefinition (SAMR) model (Puente, 2014). One model of technology integration is the Dynamic Decision-Making Model (see Figure 2) which was developed to aid teachers in making informed decisions about integrating 3D printing. Furthermore, it was developed to support educators in using technology for the intent of learning rather than for technology’s sake (Steed, 2019). This model was chosen because it is one of the effective models for integrating 3D printing into instruction and it emphasises effective decisions, in terms of how to utilise 3D printing in learning.

Educators are encouraged to match the following while considering decision-making points:

- The conceptions of 3D printing with the instructional outcomes
- The 3D printing pragmatic constraints with activity-pragmatic constraints
4. Methodology

This study used qualitative research to explore how high school students perceive 3D printing in a school makerspace. Creswell (2009) described qualitative methods as an approach for investigating and understanding the meaning that individuals associate with social or human problems. This case study design helped me to examine the practices of high school students at a bilingual school on a deeper level through analysing data obtained from high school students in Kuwait. In addition, the use of a case study methodology is important to this study in that the primary aim was to understand the possible contributions that 3D printing has or could have on teaching and learning.

4.1 Site Description

The study was conducted at a bilingual school in Kuwait City. The campus serves more than 2,100 students and has four buildings: one high school, one middle school, one
elementary school and one preschool. The school offers a bilingual programme in which Arabic and English carry equal emphasis and status. The majority of students are Kuwaiti. The school has a makerspace (see Figure 3) which contains the following stations:

1. 3D Printing
2. Robotics and Coding
3. Science and Engineering
4. Electronics and Tinkering
5. Arts and Crafts
6. Augmented Reality
7. Green Screen
8. Woodwork
9. Laser Cutters and CNC routers

4.2 Research Methods

I applied qualitative research methods to gain insight into students’ beliefs and experience. Using a qualitative case study approach, I utilised two methods of data collection: surveys and fieldwork notes. The use of surveys has been reported to be a useful qualitative approach by other researchers. The purposive sampling principle for participants was used as it allows for effective data triangulation, thus enhancing validity (Ritchie & Lewis, 2013). The survey involved qualitative questions in order to allow me to delve deeper into the required data to examine the perceptions of students using 3D printing in projects. I observed students during seven 3D projects in a makerspace and made field notes on each project (see Appendix A).

4.3 Participants

The participants of this study were selected from high school students in a bilingual school in Kuwait from grades 11 and 12. Their ages ranged from 16 to 18. Participants were selected through purposive sampling. Purposive sampling allowed for the identification of high school students with certain criteria (Patton, 1980). Furthermore, high school students were used as a purposeful sample due to their participation in 3D printing projects in the makerspace.

4.4 Equipment

The da Vinci Colour printer (see Figure 4) was used in this study. It is the world’s first full-colour 3D printer which utilises inkjet technology to produce quality full-colour 3D prints. Moreover, the printer has a 3D print bed volume of 7.9 by 7.9 by 5.8 inches. It was chosen for several reasons: it saves work in case the power goes off, students can change the filament during the printing so they can use different colours in the model and students can colour what they print. Also, there is a free 3D gallery which contains many 3D models.
4.5 Data Analysis

The focus of this analysis was to understand and describe the participants’ experience while working on 3D printing projects. I analysed two types of data separately: survey results and field notes. Concerning the analysis of the online survey, phase 1 of data analysis included collecting survey response data. I was able to access the returned survey data in a Google Sheets format, which showed responses by date. After the codes were grouped, data were organised as related among respondents. The online survey was analysed using open coding with Charmaz’s (2006) grounded methodology.

4.6 Ethical Considerations

To ensure the rights of the students, each participant’s anonymity was guaranteed. Any request to withdraw from the study at any time would have been honoured. The name of the school was anonymous; however, the school requested that the researcher present a summary to the director.

5. Findings and Discussion

5.1 Survey Results

5.1.1 Observations from Question 1

1. Describe the 3D printing project you did in the makerspace.

The majority of students’ 3D printed models were items such as a key chain, an iPhone case or a tower. Other students printed a large, coloured brain using the big colour 3D printer. Many students were interested in 3D printing items that were very large. Students used only two types of software: Tinkercad and Sketchup (see Appendix 1). Three students described their project as ‘fun’.

5.1.2 Observations from Question 2 and Question 3

2. Choose the skills you have developed while working on 3D printing projects.
3. Write other skills.

Out of 32 participants who answered this question, 27 mentioned that they had developed technology skills while 26 participants said they had developed their creativity (see Figure 5). Nearly 70% of participants chose collaboration. A small number of participants chose decision making and critical thinking. Some students reported that they learnt how to work better in groups, and they found the maker-space environment fun.

Figure 5. Analysis of question 2

5.1.3 Observations from Question 4

4. Have you faced any problems while working on 3D printing projects?

Eighteen participants, which is 56% of the whole sample, stated that they faced problems during the 3D printing projects (see Figure 6). On the other hand, 14 participants stated they did not face any problems in their 3D printing projects.

Figure 6. Analysis of question 4

5.1.4 Observations from Question 5

5. Write the problems if your answer to the previous was yes or skip the question.

Students mentioned three main problems while they were working on their projects. Firstly, they need help and training. Secondly, they need a big 3D printer to print big models. Thirdly, they need more time to complete their work. The following list summarises their answers:

1. Students need to learn how to colour a model.
2. Students spent too much time on fixing their model.
3. Students need to 3D print a large model.
4. Students could not print successfully on their first attempt.
5. Students need more training to support them during 3D printing projects.
6. Students need help to make the correct measurements for their models.
7. 3D colour printers are not feasible printers.

5.1.5 Observations from Questions 6 and 7
6. How can we improve the 3D printing station in our makerspace?
7. Write other comments.

Students suggested that their 3D printing station should be more organised by having more space for collaboration. In addition, they suggested that more choices for filaments, computers and colours should be added. Furthermore, they mentioned that they needed more training in 3D printing. Only one participant stated that it was perfect, and it does not need any improvement.

5.2 Findings of the 3D Printing Projects Analysis

As mentioned in the field notes (see Appendix 1), I noticed that many students faced problems during their 3D printing colour projects, and they could not print successfully during their first attempt due to some mistakes in their designs or technical issues with the 3D printers. Additionally, more features should be added to the software of 3D printers as it takes too much time to prepare the file for printing. Finally, teachers always have a plan B in case something happens with the printers, and the makerspace staff should have an extra extruder to use in case the filament is jammed. Although students faced problems, said students were also happy and enthusiastic about working on 3D projects.

5.2.1 Conceptions of 3D Printing with Regard to Instructional Outcomes

3D printing has the potential to offer exciting learning experiences (Bull, Haj-Hariri, Atkins, & Moran, 2015). Moreover, 3D printers offer a new approach that educators can use to engage students in critical thinking and problem-solving, and to bring lesson plans to life (Fettig, 2017). For example, during a lesson on the brain (see Figure 11), students were excited and motivated to learn 3D modelling; this also enabled them to understand the new concepts that they were learning. Furthermore, the main purpose of using 3D printing should not be building a model rather than gaining learning value (Flowers, 2019). For example, during the house project, students practiced their spatial ability by identifying the distance between the walls (see Appendix 1).

Participants indicated that they acquired 21st-century skills such as collaboration, communication and creativity (see Figure 5). A small number of participants mentioned that 3D printing developed critical thinking skills. Critical thinking can be developed when students start designing from scratch and creating complex models. However, in this study, few students designed their models from scratch (see Appendix 1). Scot (2015) states that the research evidence is conclusive: enquiry, design and collaborative approaches to learning build a powerful combination of content understanding, basic skills and applied 21st-century skills.

5.2.2 Pragmatic and Technical Constraints on 3D Printing

There are some constraints that teachers need to consider when using 3D printers (Steed, 2019) for example, teachers need to match the pragmatic instructional requirements with the pragmatic issues of using 3D printing. Participants have indicated that it takes too much time to print, and so teachers had to extend the assignment for two weeks to enable students to finish printing their models. Moreover, they stated that it took much time to prepare the model for printing in the software and some students were not happy about waiting for more than 15 minutes (see Figure 8). Understanding the constraints of 3D printing can impact the
way in which it can be integrated into projects in a makerspace. Additionally, it can help teachers and students to find creative ways to work around these barriers so that 3D printing can be used to empower student enquiry (Flowers, 2019).

Although students enjoy adopting 3D printing in schools, teachers should have a back-up plan in case something does not work as planned (Novak, 2019). During the brain project, students tried to use the flexible filament, but they could not do so due to certain technical problems. Instead, teachers advised them to use the normal filament (see Appendix A).

One of the challenges in 3D printing is the effective use or the educational value of the outcomes. Teachers should not use technology for technology’s sake rather than with the intent of learning. ‘Without more advanced learning opportunities, academics will struggle to place digital technologies such as 3D printing at the centre of educational learning instead they remain supplementary to it’ (Loy, 2019, p.100). Although printing 3D models might not require creativity from the user, the real value comes out of the process of 3D designing the model and connecting the 3D model to solve a problem.

5.2.3 Product Constraints with 3D Modelling Features

There are many 3D modelling applications with different features. Teachers need to suggest one that is user-friendly and does not take up too much of students’ time. For example, in the house project (see Figure 9), students used SketchUp, but they could not continue because it was too complicated and advanced for them. Instead, they were advised to use Tinkercad as it had the features they needed. In this study, the students were confused by having many kinds of slicing software, a free software used in of 3D printing processes for the conversion of a 3D object model to specific instructions for the printer. For example, there were three slicing programs for XYZ 3D printers.

5.2.4 Activity Product Constraints with 3D Affordances

Knowing about 3D printing affordances can help teachers design suitable 3D activities for their students. There are many 3D affordances that can affect instructional activities, such as rapid prototype, scalability, complexity, uniqueness, and variable density (Steed, 2019). Many instructional problems can be decreased if teachers and students are aware of 3D affordances such as infill density.

Infill features relate to the amount of filament inside or between the layers and they can be found in many 3D printers with different options. Students should be aware of their project requirements in terms of infill so as to obtain the desired effect. Participants of the house project failed to 3D print the house more than three times because they had to choose the correct settings in the infill options (see Figure A).
10). Another affordance that helped my participants in their projects was replicability – making many copies of the same model at the same time. This feature could be found only in small 3D printers (see Figure 11).

5.2.5 Learning with 3D Printing’s Contextual Benefits

Although 3D printers are available to fulfil objectives for teaching and learning, the real objectives of these materials sometimes do not meet the students’ needs (Santos, 2007). 3D printing is not about making a model only, as the process involves learning other skills through the design and printing models. Rather, using design thinking as an approach to guide the process can be helpful, as students need to follow several steps, such as identifying the problem, materialising and testing. During the process, students might fail to 3D print successfully due to mistakes in designing, and so they may decide to start again (see Figure 12).
There are many learning opportunities to be had from unforeseen equipment errors (Kerestes, 2019) and the process of overcoming these errors can help students to embrace mistakes as a method of learning. In the course of working on the house project, the model became corrupted. During the analysis of this 3D printing error, students realised that the ground of the house was 2D and the walls were very thin. However, they could print successfully after they adjusted their design. Engaging in the design of a 3D object can aid enquiry-based learning for students as they learn the new features in the software and try to solve the problems of their design (Flowers, 2019). Failed attempts at printing models can open up new learning opportunities if they are analysed as students help other students to engage in experimentation and investigation.

5.2.6 3D Printing Approaches and Activity Learning

In 3D designing lessons, students can design through three approaches: by downloading a ready-made model from the internet and customising it later, by scanning an object with a 3D scanner or by designing from scratch. In this study, the majority of designs were downloaded from the internet, but a few projects started from scratch when students were familiar with 3D designing. Some students chose to use a ready-made model because they did not have enough time and they had not been trained how to design 3D models.

Despite increasing focus through programmes such as STEAM, there is little support offered to schools and teachers to learn 3D printing and associated skills such as 3D scanning. New methods of training must be implemented by schools to ensure that teachers and students know how to use 3D printing (Novak, 2019). 3D printing has expanded over the last few years as teachers have explored its potential as a learning tool in many subjects. ‘Thoughtful integration and professional development are required for teachers and students to support them on how to use this technology’ (Bull et al., 2015, p. 14).

6. Limitations

These findings should be read with the following limitations in mind. In this study, I observed only a few 3D printing projects in a school makerspace. Certainly, observing other school makerspaces and increasing the number of participants would make this study more robust. Furthermore, the researcher’s choice of employing a case study methodology limits the scope of this study in terms of population size, demographic data, and other aspects. However, it is still believed that this study provides useful insights and groundwork for future research.

7. Conclusion

While the rapid growth of technological advancements such as 3D printing offers many opportunities to learn numerous skills for the future, educators need to find ways to integrate this technology into the curriculum. Findings of this study revealed that students learnt many skills. However, there were many constraints of using 3D printing which have been highlighted in the discussion of the findings through the Dynamic Decision-Making Model. Over time, these constraints might be reduced due to predicted technological advances in 3D printing. While 3D printing can help to engage students in many skills and in different subjects, 3D printing should be purposeful, and facilities should be focused on learning rather than making a model. In this study, the first key finding is that educators should plan well before using 3D printing as they might face many problems. The second key findings suggests that teachers should not focus on the process of 3D printing. Rather, they should focus on the process of designing and on helping students to embrace making mistakes as a method of learning.

While these findings are tentative and invite further in-depth research due to the study’s limitations, the study contributes to the scarce body of knowledge on how 3D printing technology can enhance a curriculum and describes students’ experience during 3D projects. Practitioners can find the study useful when they want to establish 3D printing laboratories or expand their existing stations. It is recommended that when schools buy 3D printers that they purchase printers that are upgradable, so that the school can grow with the latest developments rather than the machine becoming outdated in this rapidly changing innovative world. Finally, schools should provide teachers with professional development to learn how to use this modern tool effectively.

References


High school students’ experience of a 3D printing station at a bilingual school makerspace in Kuwait

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About the author

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Appendix A. Field notes

<table>
<thead>
<tr>
<th>Projects</th>
<th>Notes</th>
<th>General Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building a house</td>
<td>Students failed to 3D 3 times&lt;br&gt;They used the wrong type of Filament&lt;br&gt;The door that is designed was very thin.</td>
<td>Students prefer to download ready-made objects from the internet.&lt;br&gt;Chipped filament is available by the company, so people are forced to buy filament from the same company.&lt;br&gt;Flexible filament did not work with the 3d printers.&lt;br&gt;It is recommended to have extra extruder to replace it with the extruder when it is jammed with the filament.&lt;br&gt;The majority of students are eager to solve their 3D problems&lt;br&gt;It took too much time to 3D print some projects&lt;br&gt;I was told that one should always monitor 3D printers by the technical support, but this is not feasible&lt;br&gt;It is recommended to buy 3D printers that can be upgraded because this technology is under-development.&lt;br&gt;The small type of 3D printers is the most feasible one.</td>
</tr>
<tr>
<td>The mobile case</td>
<td>They failed because they used the mix 3D printer but when they tried to another printer, they printed successfully.</td>
<td></td>
</tr>
<tr>
<td>Forest fire</td>
<td>They failed to 3D print from the first time but when they decrease the size of the model, they printed it successfully.</td>
<td></td>
</tr>
<tr>
<td>Glasses</td>
<td>It is printed successfully</td>
<td></td>
</tr>
<tr>
<td>Cone</td>
<td>Students needed to copy the model, but they could not find it in the up-dated version of the software.&lt;br&gt;Cancelling printing the projects took much time.&lt;br&gt;Much time for preparing the model.</td>
<td></td>
</tr>
<tr>
<td>The colour 3D printer</td>
<td>This is still a new technology. It is still in its infancy.</td>
<td></td>
</tr>
<tr>
<td>The brain</td>
<td>Students could 3D print many parts of the brain using the small printers&lt;br&gt;After several attempts, they could print a colour model using the colour 3d printer but in a small size&lt;br&gt;Students could 3D print a brain using a Super printer and they painted it&lt;br&gt;Students liked the model that they painted rather than the small one of the colour 3D printer.</td>
<td></td>
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‘Silence’, the invisible tool of a dialogically extended mind: An email experience of a Kuwaiti tutor in higher education

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Abstract
Silence, within mainstream feminist scholarship, is based on a binary understanding in relation to voice. Silence is demeaned and seen as the unwanted other. As a result, silent women are depicted as powerless and oppressed. In this paper I examine the dynamics of an email episode I experienced with a female student within a Kuwaiti higher education context. Combining Carter’s (2006) views on archival silence and approaching the email event from a dialogically extended mind perspective (Fusaroli, Gangopadhyay & Tylen, 2013) I offer a different understanding of silence. Following an autoethnographic approach to research, I argue that silence needs to be freed from the dichotomous entrapment in order for other meanings to emerge. Focusing on the process of the dialogical interaction within the email context I was able to see how silence plays a role as a tool that dialogically extends the mind. Silence emerges as intersubjective, dialogic and requires collaboration.
1. Introduction

The feminist understanding of silence is plagued with demeaning depictions and is generally recognised as loss of power (Mishra, 2013). Feminists struggle to break silence and give women a voice (Pagis, 2010). Trapped in a binary construct, silence has been diminished and viewed opposite to voice as unwanted other (Solnit, 2017). This dualism prohibits new meanings to emerge; it is premised on ‘either/or’ approach. In fact, in much Western scholarship a dichotomy is what silence and voice had become where silence is seen as “the theft of voice” (Acheson, 2008, p. 537). Women’s images suffer as a result. A silent woman is a powerless woman. And when ‘other ‘different’ women are in question the images are even more troubling (Mohanty, 2003; Lazreg, 2012).

In this study (a), I initiate a research project which examines one possibility to bring together two almost opposing views on experience; one which asserts the body and feelings and the other which emphasises the mind and externally-derived tools. By approaching the concept from an extended theory framework and a dialogically extended mind (DEM) perspective I offer a different understanding of ‘silence’ one which reveals its richness and complexity in a deserving non-reductionist way. I draw on the argument offered by Fusaroli, Gangopadhyay & Tylen (2013) concerning DEM, and combine it with Carter’s (2006) views on silence, to propose a different understanding of silence; a tool of a dialogical engagement which enhances thought. I am aware that while many studies of cognition have assessed language comprehension, few have focused on how words, like tools, can be used to accomplish tasks via external means (Borghesi & Cimatti, 2009). Silence seems to be absent from such studies that explore the social aspect of words as tools of cognition. Therefore, I try to show how words in their visibility (voice) and invisibility (silence) enhance thought and extend cognition.

On a personal level this study I undertake is important to me because I work at a woman’s college with more than 24,000 female students enrolled. I take women’s issues at heart and seize every opportunity to understand the young women learners I work with better. Some of these students are married and some have children, yet they are all fulltime students. Their lives are imbued with different responsibilities. This piece of research provides me a possibility to understand those lives differently and accordingly brings the human aspect into perspective at one level, and during tutor/student-student interaction online. On another deeper level, it accentuates the importance of the human element in course design and for online settings. In this study I do not address pedagogical concerns, I am primarily interested in fueling a different narrative related to online silence and paving way for future studies concerned with online pedagogy and (text-based) interaction. My focus in the empirical part of the study is my experience as a tutor in the Kuwaiti higher education college. Using an autoethnographic methodological research approach, I analyse the dynamics between silence and voice of nine email texts I received from a Kuwaiti female student, and shed light over a concept that has been associated with powerlessness and passivity (Gal, 1989; Parpart, 2013). I narrate my experience and insert myself reflectively throughout the text (as I see suitable), autoethnography allows me to do so.

With that in mind, and within the Kuwaiti college context, using the email online texts of a Kuwaiti female student, I address the following question:

- How can silence be understood in the light of a dialogically extended mind (DEM)?

Namely, how can silence be conceived as a tool of cognition that enables individuals to form an intersubjective cognitive system?

To answer these two related questions, I posit these sub-questions:

- What is the relationship between voice and silence?
- What role does silence play in enhancing cognition?
- What implications does DEM have for the feminist views on silence?

Following this, I give an overall view on the construct of silence within the feminist literature. I then allude to extended mind theory and progress to a discussion on DEM perspective and theoretical framework. Subsequently, I elucidate my methodological research approach of autoethnography, contextualise my experience and attend to narrate my email story. I end the paper by tying the knots of my discussion and then conclusion.

2. Silence; the invisible other – an overall view

Feminists have drawn attention to the invisibility of women in literature and academic disciplines; women’s experiences were either distorted or misinterpreted. The feminist quest was to correct the record and reveal women’s experiences wherever they were absent (Lazreg, 1994; Smith, 1988). Women’s experience is understood to be located within structures of power relations between men.
and women; devalued and often silenced. To posit personal experience as valid is to give women an authoritative voice (Stanley & Wise, 1993). Hence, the concepts of experience and voice are central to feminist research and thought, although it is difficult to find an agreed definition of the terms (Lazreg, 2012).

Whether in research or pedagogy, the claim is the same; the validity of experience is fundamental (Weiler, 1991). Women as a result are empowered (Humm, 1991). The feminist stance is premised on the notion of voice, and the physicality of voice in sharing women’s experiences (Mishra, 2013). It becomes obvious then how voice and silence are perceived as opposites. It has been said that “women who cannot speak out are seen as disempowered, unable to act and to effect change” (Parpart, 2013, p. 15). A ‘speaking subject’ is a fulfilled feminist objective (Solnit, 2017). In this sense, voice is used as a metaphor which implies a strategy that aims to empower (Kenway & Modra, 1992). Voice is aspired and celebrated while silence is demeaned and leads to women’s invisibility. Accordingly, voice as it is conceptualised is an oppressive concept (MacMillan, 1995; McNeil, 1992; Orner, 1992). Locked in a binary construct, silence is the unwanted product and a sign of powerlessness.

This dichotomised view, built on an either/or logic, is ahistorical, decontextualised and abstract (Mohanty, 2003). Feminists’ construction of voice and silence is trapped in an opposition, creating a dualism of voice, seen as always powerful, and silence, seen as always powerless (Orner, 1992). This binary structure is simplistic and confines the two concepts to a hierarchical relationship preventing other forms of understandings to emerge. Feminist critics argue against this binary system (Mishra, 2013; Mohanty, 1986). They assert situating individuals socially, culturally, and historically. People’s local context and trans-local context matter in understanding their experiences (Curnow, 2016). And those who view silence with a singular meaning ignore the shifting relations of power and the profound contextual nature of interaction (Orner, 1992). Studies have shown that silence is used as a strategic and survival tool (Lazreg, 2012; Lewis, 1994; Parpart, 2013; Potter, 2015). Silence provides time to reflect, think and formulate questions in a classroom setting (Alerby & Alerby, 2003; Peterson, 2010). It is also used as a resistance tool and an act of a challenge in the different contexts (Carter, 2006; Mishra, 2013; Parpart, 2013; Trehan & Rigg, 2006).

It is simply erroneous to restrict silence to a reductionist meaning, which evades the complexity and the interrelatedness of silence and voice. In order to understand silence and release other forms of understandings, it must be freed from this dualism. Attention must be drawn to analysing silence, and the different forms it may take (Ellsworth, 1992; Lather, 1987). Dismantling the binary structure means exploring silence in process and as it is experienced. It also means looking for ways to perceive silence as part of the contextual dynamic and not only a product of it.

My experience working as a woman tutor in the Kuwaiti women’s college does not comply to the feminist construction of silence. In my thirty years of work, I have witnessed myriad incidents where I found female students use their silence and voice tactfully and persistently. I found some of my women students already powerful not in need to be empowered. These compelling examples are erased when a dichotomised depiction is forced upon silence, which makes the search for different meanings more pressing. This research stems out of my genuine concern working with young women in the Kuwaiti women’s college. And the frustration with the restricted images rendered for silent women. The story I choose to share is unique; it is an incident I experienced with a female student of mine I call Amal. I am hoping that Amal’s story and mine could help deepen our understanding of silence and enrich the feminist argument. But first I allude to the theoretical framework that will guide the meaning making of my email experience.

3. Beware, minds are everywhere; the dialogically extended mind (DEM) – a theoretical framework

Extension theory (ET) is not a unified theoretical framework on human-technology relations (Heersmink, 2012). But all variations share the basic idea that technical objects are projections or extensions of human organism “by way of replicating, amplifying, or supplementing bodily or mental faculties or capabilities” (Lawson, 2010, p. 2). While artefacts can be experienced as distinct objects, in a stronger version of ET humans and artefact merge and become a “new systemic wholes” (Heersmink, 2012, p. 122). This system is characterised by integrating technology/artefact in the body schema or the cognitive system allowing artefacts to become part of the human motor and perceptual system. The new whole is a coupled system; a two-way interaction system where both have a causal role in the cognitive process (Clark & Chalmers, 1998).

In the coupled systemic whole, the human-tool boundaries are diminished forming an extended enhanced human that confronts the world. External objects, therefore, have an active role and direct impact on the human through ‘active externalism’ (Clark & Chalmers, 1998). In extended cognition
of the coupled system, the external features are as important as the internal features of the brain; they have the power to enhance our internal cognitive processes (Borghi et al., 2013). Therefore, cognitive processes take place in relation to the experience of the body and impact the environment through a symbiotic external cognitive system (Sarosiek, 2016).

Words are also seen as external devices and cognitive tools; thus, they extend our cognitive abilities. Clark (1998) explains that although language and words extend our minds, language is a tool for structuring and controlling action. Words are “endowed with the power to augment and complement our computational abilities,” then can be used as a tool of modification and instruments of action (Borghi et al., 2013, p. 4). For Borghi and Cimatti (2009) words are conceived as a set of social tools with each word acting as a specific tool of direct experience that are used in our daily life experiences. For them, an individual experience has two sides/sources; an individual one and a social one. The first one is located in the individual mind and the second one outside the mind; particularly in the words and language one uses to formulate internal verbal thought. Perceiving words as tools means that they are projections/extensions of inner cognition into the social world, i.e., a socially extended cognition (Fusaroli, Gangopadhyay & Tylen, 2013). This social component of words as external devices and cognitive tools is undervalued within approaches to extended cognition (Borghi et al., 2013).

Further, and according to Borghi et al. (2013), words can be used as tools of action; they accomplish goals. But words work as tools only when other people collaborate, i.e., they work effectively if they promote a positive dynamic interaction with others – a willingness to collaborate. This is a linguistic intersubjective activity, Borghi et al. explain, where “individuals come to jointly apprehend and manipulate information to create informational and behavioural interpersonal synergies, which potentially outstretch the cognitive abilities of any of the individuals were they on their own” (p. 32, my italics). Hence, through the intersubjective dynamics individuals become each other’s cognitive extensions giving rise to composite units that exceed the individual part. Fusaroli, Gangopadhyay & Tylen (2013) stress the importance of the cognitive enhancing potential of language which “facilitates informational-synergy-creating intersubjective coupling” that constitutes a dialogically extended mind (DEM) (p.6). Language, then, is a tool for interacting minds which enables dialogical engagement through its materiality.

But what about ‘invisible’ silence? The discussion above considers words as social tools; they are expressed through our bodies written or spoken. They also function as tools when they promote a dynamic intersubjective interaction. Therefore, the absence of words (silence) could mean the erasure of their functionality and function. This seems to be possible when words are tied to collaboration, understood as the ‘willingness’ to (visibly) work (Fusaroli, Gangopadhyay & Tylen, 2013; Borghi et al., 2013), while (implicitly) non-collaboration (silence) is seen as ‘unwillingness’ to (visibly) collaborate and work, revealing what seems to be an implicit bias against silence based on a dichotomised view.

Still the argument above, particularly in relation to DEM, seems to be promising. But there remains a hurdle to overcome with regards to silence. Trapped in a dichotomised depiction silence is seen “always as passive” and “negatively perceived as a lack” (Acheson, 2008, p. 537 & p. 536). Silence as such is excluded as an intersubjective tool that dialogically extends the minds of others. Releasing silence from the dichotomised entrapment, I believe, is a first step in my search for a different construct of silence. The second step is to focus on processes and interactions that underlie dialogical engagements with interlocutors. And to examine the communicative intersubjective dynamic within which silence might play a dialogical role extending interlocutors’ cognition.

To accomplish that I first turn to Carter’s (2006) feminist views on archival silence which invalidates the oppositional construct. It also provides an entryway to build an argument for silence as a tool of DEM.

4. Making sense; a dialogue between silence and voice

Carter’s (2006) study on archival silence, and his investigation on how silence is used as a method to deny the archives their records, offers an appealing account to evade the dichotomous frame. Archives include texts of different kinds; written, visual, audiovisual, and electronic. These physical records produced by members of the society are stored in the archives. Archives are social tools that extend a collective/societal memory. But Archives are also ‘spaces of power’ where certain narratives and types of records are included while others are excluded. The powerful ‘social memory keepers’, define the records that enter the archives by the act of inclusion and exclusion, creating what Fivush (2010) distinguishes as ‘master/canonical’ narratives. Thus, archives are impaired, leading to affected/compromised collective memory. That is, the records tell a small portion of a much larger and complex story. But they also allude to an excluded portion at the same time. This means that a
collective memory of a group/society is represented jointly by words, texts, and voices and their counterparts; silences and omissions. Carter’s (2006) argument is helpful here because it rests on the understanding that within remembering is forgetting and within forgetting is remembering. Hence, Archives produce memory and forgetting concurrently. Accordingly, speech/words and silence are produced concurrently: they are “dependent and defined through the other” (p. 223).

Carter’s delineation as such challenges the reductive account and the either/or logic that silence and voice are based on. Instead, the two are conceived to imply, define and depend on each other for their presence. Within the archiving context Carter (2006) refers to the ‘absent-presence’ term. That is, what is present in the archives is defined by what is not. In a dialogue situation, then: what is said/written is defined by what is not said/written – words are characterised/identified by what is not. The focus is clearly shifting from a binary-based understanding to a complex intimate unity relationship between voice and silence. The two appear to be intertwined; each delineating the other. This depiction, for me, necessitates the awareness that silence and voice share the same space and temporality (Acheson, 2008). It also alludes to the complexity and richness of silence and voice that surpasses a simple dichotomous depiction.

Next, I attempt to join both arguments; DEM and the depiction of silence and voice as a unity in order to explore the possibility of perceiving silence as a dialogical cognitive tool. For that I dedicate the rest of this study. First, I give an overall view of my research approach, I then focus on the interactive dynamic of my email experience and narrate my story.

5. Autoethnography: a methodological research approach to experience

Autoethnography is most suitable for this study; it is a methodology that allows researchers to write solely about their own experience (Richards, 2016). Autoethnographic researchers selectively and retrospectively write about ‘epiphanies’ that connect them to the wider culture (Ellis, Adams & Bochner, 2011). They use their experience as a vantage to elucidate aspects of cultural experience for insiders and outsiders. In the name of objectivity and reliability researchers are denied access to their emotions, feelings, and personal involvement in a project that depletes those same elements. “This approach challenges canonical ways of doing research and representing others... and treats research as a political, socially-just and socially-conscious act...” (p. 1).

Autoethnography also challenges binary structures, therefore allows me as a researcher to look for other possibilities of understanding. For Pathak (2010), autoethnography allows her to make sense of the world she lives in. She talks about the false binary that has been created by ‘scientific imperialism’. Knowledge is either of the body or the mind, thus creating a dualism that prevents us from considering the possible ways they meet. In this binary, knowledge is portrayed as apolitical; the intellectual is superior, while the body is inferior. According to Michelson (1996), the emotional and the physical being is just as informative to our being. They offer moments of connectedness to the world we live in. “To know is to engage an experience fully with one’s mind, body, and heart” (Pathak, 2010, p. 4). To explore experience and legitimize it is to create spaces for multiple representations that challenge the norm. Awareness is gained exploring life stories and real experiences (Witherell, 2010). It is therefore empowering to engage in a process of autoethnography.

Autoethnography allows me to inscribe my email experience in a powerful way that invests emotion, body, and mind; an invitation of a unity in its approach. It is most appropriate in my search for a different meaning of silence that defies the binary norm. To my email story, I turn next.

6. Contextualising self

The last few days, before the semester comes to a close, I find emotionally draining. During this time, students’ grades are finalised and published. Within two days of posting the final grades students who might suspect a human error can ask the tutor for a revision. But it is (almost) a norm that final grades students who might suspect a human error can ask the tutor for a revision. But it is (almost) a norm that students ask tutors to reconsider (and raise) their grades regardless. At times, students’ relatives or friends of relatives would intervene to have a grade raised, and sometimes these included staff members and colleagues. Here, I present one recent experience with Amal, the female student whom I taught.

‘Educational media workshop’ is a compulsory final year module that all female students must pass in order to graduate. I have taught this module several times; it convenes once a week for three hours. Students are required to produce various pieces of instructional media (approximately five mini-projects) according to a sequential timetable. Students work in small groups, but each has to individually produce their own pieces of work. The themed project for this particular semester was named ‘I am woman,’ and revolved around students’ lives, or a woman who had a bearing on their lives.
A detailed coursework description (including assessment procedures and criteria) was shared, as well as an itemised timetable for all pieces of work. During the first meeting of class, we discussed all matters related to the module; objectives, requirements, attendance, assessment, and communication methods with tutors. Beside face-to-face appointments, students had access to my email. They also formed a WhatsApp group with a student-leader of their choice, who facilitated communication with me. Each piece of work was discussed during class meetings, sharing examples of the past students’ work. Students were also encouraged to be creative and ask for guidance and extensions if needed. I explained that each work a student submitted received a written feedback, and a deserving grade. Students could eventually calculate their final grades for the course. I took the opportunity to emphasise that my students’ grades were posted on time and queries were answered within the time limit approved by college regulations, and all final grades were officially published. It was reassuring to also know that students were able to keep track of their grades throughout the progression of the module. Further, the assigned group leader was continuously in touch to relay any queries or concerns, the students might have had. Eventually, after a week of absence, I was able to attend to my email messages. I did not expect to see nine emails from Amal. Of course, she was unaware that I was virtually absent throughout the entire nine-email episode. I started reading the emails one after the other, bewildered, annoyed, but mostly astounded. I felt I was inundated and was unable to fathom the extent of the information confined in the textual space.

My focus in this study is an email incident I encountered with Amal. I chose this incident because it is distinctive. In my thirty years working at the women’s college I have not encountered an incident as such; it is simply unique in its occurrence and its content. It is also genuine because Amal was unaware that she was interacting with an absent tutor throughout the email episode. I was literally unavailable to read and respond to Amal’s emails; my silence was unintentional during the entire episode. I read the entire email series three days after Amal ceased corresponding; this was two days prior to the end of the term. For me it is a perfect example of a dialogue between silence and voice. Taking into account that it is an online textual context, I am hoping that this exploration will enrich our understanding of ‘silence’.

To grasp the events of the email episode in its entirety, I use two main sources; Amal’s emails dispatched to me, and module records, including attendance, grades, and evaluation. I also express my feelings of this incident, which only occurred few months ago. I read the printed e-mail ‘script’ several times in its original Arabic text. I then translated the dialogue into English. I was true to the original script and ensured that the English translation portrayed the original meaning of the email script. Below, I share the detailed account of the email encounter to engage the readers with my story, findings and analysis. In doing so I allow the readers to be co-analysts in this investigation (Zembylas & Vrasidas, 2007).

7. The story: caught between body and mind

During the last few days of the previous term, I was particularly consumed by the amount of work that I had to complete within the college boundaries, especially with regard to students’ assessments and final grades in the various other modules I taught. Checking my email messages was not a priority. I felt comfortable that my students’ grades were posted on time and queries were answered within the time limit approved by college regulations, and all final grades were officially published. It was reassuring to also know that students were able to keep track of their grades throughout the progression of the module. Further, the assigned group leader was continuously in touch to relay any queries or concerns, the students might have had. Eventually, after a week of absence, I was able to attend to my email messages. I did not expect to see nine emails from Amal. Of course, she was unaware that I was virtually absent throughout the entire nine-email episode. I started reading the emails one after the other, bewildered, annoyed, but mostly astounded. I felt I was inundated and was unable to fathom the extent of the information confined in the textual space.

Amal sent her first email which simply read: “Hello Professor.”

I was silent/absent.

The following day, she wrote: “I am a student in the Tuesday workshop, and I got a B- as my final grade. This grade has really lowered my grade point average (GPA). I was hoping to graduate this year, but my GPA is too low. Can you please, please raise my grade? I will not be able to graduate with my current GPA and I have already received multiple warnings to raise it.”

I was silent/absent.

Later that day, Amal sent another email explaining: “Professor, I want to graduate this year. It is not fair to have to repeat your module in order to raise my GPA, please help me even if you raise me by one grade.”

And I was silent/absent.

The next morning, she sent a pleading email: “Help me! I have got multiple academic warnings; I will not be able to graduate unless you raise my grade.”

I was silent/absent.
Twenty minutes later, she wrote: “Change my grade! It is too low.”

And I was silent/absent.

Two minutes later Amal wrote: “I have no absences; I have made an effort to attend all classes even though I am pregnant and exhausted all the time. Please, I beg you, raise my grade!”

And I was silent/absent.

Approximately four hours later, she wrote: “Professor, I am physically and emotionally drained. I attend college every day, despite my morning sickness. Please understand what I am going through. I have been trying hard to raise my GPA, but because of the grade you gave me it has dropped.”

And I was silent/absent.

A minute later, she wrote: “Please, I beg you, raise my grade!” (followed by six ‘loudly crying face emojis,’ a graphical image representing facial expression).

And I was silent/absent.

The following day, Amal sent her last email saying: “Professor, the last day to officially register students’ grades is on the 30th, so I am begging you; change my grade!”

And I was silent/absent.

Amal was silent after this last email

And I remained silent/absent.

Feeling heavy-hearted that it might have been an error on my part, I immediately reviewed Amal’s attendance-record. I learned that she was not accurate to emphasise her full and punctual attendance. I went on to recheck her coursework marks and final grade and concluded that there were no calculation errors. I then decided not to respond to her emails; I was angry and overwhelmed and chose to remain silent. Reading through Amal’s lines (now), and hearing her desperate yet powerful words, I am left to wonder what would have happened had silence not been the final piece of the dialogue?

I have no doubt that my (unintentional) silence urged Amal’s nine textual emails, it played a pivotal role; it fueled the dynamic engagement the way it did. Amal did not question my invisible presence; she accepted my silence, understood it and replied accordingly. Between her words and my silence, a dynamic dialogical interaction was revealed. Amal had an obvious goal; to raise her final subject grade, and her task was to convince me to do so. Her first email consisted of a greeting only. Perhaps, Amal hesitated to ask, or wanted to seize my attention, or perhaps it was a strategy to build her confidence; she initiated the dialogical encounter without a request, and that was received with silence.

In her following email, the next day, Amal sent a seemingly straightforward text establishing the setting (by introducing herself), providing a strong motive (low GPA and graduation) for her request (raising her grade), and further accentuating her motive (stating penalty/warnings). Amal received silence. But she had a lot to lose (according to her) and limited time to have her request fulfilled. Hours later and in response to my silence, she wrote a precise text clearly stating her motive, her moral stand (not fair to repeat subject), and her compromised/negotiated request (one grade up). That was also received with silence.

In response to my silence Amal asked for help the following day, explaining her motive/intention (to remove college penalty), Amal distinctly ties her eligibility to graduate (motive) with my action of raising her grade (her request). But her request was still farfetched, and was met with my silent reply. However, Amal did not give up, twenty minutes later, her plea became a direct authoritative order (change my grade!) and for a different reason (her low subject grade). Swiftly, two minutes later, she sent another email extending her thoughts to new areas (full attendance, effort to attend – pregnancy and exhaustion). My previous silences seemed to have facilitated her extension into other areas of her life as a pregnant female student. Amal changed her strategy from an authoritative demand to an urgent plea (please I beg). Yet, all of Amal’s attempts to justify and negotiate her case were all silently received. Hours later, she extended her thoughts to real experience; to which another woman (I) could relate to (the emotional and physical aspect of pregnancy, morning sickness). Amal insisted on being the victim (trying hard to raise her grade despite her situation) while blaming me, the authoritarian tutor, for her low GPA (because of the grade you gave). Minutes later, she reverted to sending a pleading request to raise her grade, while emotionally extending herself with six loudly crying emojis depicting her emotional state. But yet again, her request was met with silence.

In her final text, a day later, Amal sent some hopeful information (last day to register grades), urging me strongly (I am begging you) to accomplish her goal (raise the grade). But my silence/absence remained. Amal understood my last
silence and was silent thereon.

8. Discussion

It is clear that this email incident could be approached from different perspectives, and therefore different issues could arise as a result. Drawing on the feminist literature and specifically Carter’s (2006) research on archives and the silence within, I have argued that to understand the rich and dynamic interplay of silence and voice a reductionist dichotomous view must be abandoned. Silence appears differently within the different contexts it is being exercised; it is particular even peculiar (Parpart, 2013). I have also argued that silence and voice are defined through and are dependent on each other. Building further, and with regard to words as dialogical cognitive tools, and DEM, on one hand, and the depiction of silence and voice, on the other hand, we could articulate an understanding of the relational character of silence and voice dynamics that could capture the richness of the email incident above. And further enhance the feminist view on silence.

A dialogically extended mind, discussed earlier, refers to the integration of individuals’ minds into one system in which participants become each other’s cognitive extensions. This is accomplished “through the intersubjective interaction and coordination of the material symbols” – words (Fusaroli, Gangopadhyay & Tylen, 2013, p. 6). In my email incident, it is evident that Amal was engaged and part of a dialogical exchange with silence (a silent/absent tutor) throughout. Yet, Amal constructed a dynamic interaction with silence in each step of the dialogue. And as the incident progressed, Amal seemed to interpret what my silence meant to her and responded accordingly; coordinating her perception, sharing her experience, negotiating her position, and further building her argument. In order to do that Amal had to ‘live’ in my mind to interpret my silence and engage accordingly and skillfully (Pagis, 2010). In other words, Amal was part of an intersubjective engagement that lead her to experience a composite cognitive unit (Fusaroli, Gangopadhyay & Tylen, 2013). Between my silence and her voice jointly, Amal seemed to be able to apprehend and manipulate what silence meant to her creating “informational and behavioural interpersonal synergy” (p. 2). She saw my silence as a collaborative act that allowed building her argument and interacting the way she did. Furthermore, my silence required her collaboration, which is apparent in the entire email episode. My silences were crucial and preceded Amal’s leap into building the dialogue, presenting her demands, negotiating the solution the way she did (Wegerif, 2010).

Perhaps, the most telling part was her interaction on the second day. Within the course of four hours Amal sent five emails, three of them were minutes apart, as if she was in a race with silence; she seemed to have speculated what silence was going to say/(mean) and presented her answers consecutively. In fact, her interactive behaviour could be read as an urge to force talk out of my silence. She finally used her own silence to end the dialogical encounter. But in all, she seemed to be engaged in a dialogical interchange with silence that further extended her cognitive abilities and mind. Most importantly, silence for Amal seemed to be real; it existed and was felt and materialised. She in effect read (invisible) silence as if reading (visible) words and reacted appropriately, thus turning silence into a form of communication (Pagis, 2010). And, in a peculiar way, silence became (physical/materialistic) ‘content’ she analysed, understood and reacted to. Hence silence seemed to be an imperative part of the dialogue that required Amal’s input. Silence is therefore dialogic and requires collaboration (Acheson, 2008). Accordingly, silence is an intersubjective dialogical tool that plays an important role in extending the minds of others. In other words, silence and voice jointly play a role in dialogically extending the minds of interlocutors.

9. Conclusion

My objective for this study was to investigate another understanding of silence that breaks free from the binary structure. Joining the feminist argument with DEM approach to cognition, I asked this question: how can silence be conceived as a tool of cognition that enables individuals to form an intersubjective cognitive system? I adopted an autoethnographic research approach and analysed my experience of an email incident I encountered with a female student I taught at a Kuwaiti woman’s college.

In order for other powerful meanings to emerge, a simple binary approach to silence must be abandoned. Binaries erase complexity and reflect distorted images of silence and silent women. I have argued for a depiction that rests on a unity, perhaps a fusion between silence and voice. Fusion means there are no defined boundaries between silence and voice. This unity and fusion lead to a new construct of words that allows a fluid shifting relationship between silence and voice - they are enmeshed (see Dhamoon’s (2011) argument of intersectionality). The emphasis on the social activity of words offers a compelling insight; to conceive the materiality of words as enablers of the dialogical engagement. There is also a possibility that silence is conceived materialistically in the dialogical encounter. This physicality seems to be possible if we conceive silence and voice to exist in each
other rather than oppose one another. To understand one means the other must be accounted for. Hence, silence and voice are not fixed and cannot be exactly depicted on their own. Consequently, both voice and silence imply words (Fivush, 2006).

Dialogic silence as such enriches the feminist views; silence is no longer equivalent to powerlessness. And accordingly, the prevailing silent women images are challenged. If anything, silence is active, powerful and dialogic; it extends interlocutor’s mind. This depiction is possible when research and analysis focus on the interactive process of interaction. Rather than fixing on products (silence/voice) the shift to process reveals how meanings are produced, experiences and information are shared, and decisions are made in the dialogical encounter.

Most importantly, this study furthered my understanding of silence; a dialogical tool that extends the mind. I am more aware of the engrained preconceived descriptions that afflict and affect how we see silent women/others. Although there are some limitations for this study such as: one interacting person, one main source of data and limited amount of data to analyse; it presents some powerful implications. Such implications concern pedagogy in general and educational technology design in particular. It allows serious discussions concerning the concept of collaboration, online interaction, and online textual exchanges as the focus of future research within the field of educational technology and design.

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Understanding and promoting productive interaction.


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About the author

Khadija Al-Ali works at the women’s College of Basic Education in Kuwait. Khadija teaches different subjects at the Department of Educational Technology. Her current interest is in feminist pedagogy and research within online context. The concept of silence/voice is of most concern to Khadija at the moment. This concept is firmly situated in a particular dominant narrative. Khadija is interested in investigating (an)other narrative(s) that challenges and resists a single institutionalised portrayal of silence/voice. To do that Khadija is examining the construct of silence/voice from a dialogically extended mind perspective. By joining efforts with feminist pedagogy, Khadija is exploring the possibility of constructing silence as a visible tool of a dialogically extended mind.

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An examination of undergraduate students’ engagement in an information literacy blended course

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Abstract
To develop information literacy (IL) skills of Arab students enrolled in a first year premedical programme of an American branch campus in Qatar, the Education and Research Librarian designed a blended IL curriculum that was integrated in the English for Academic Purposes course. The IL curriculum used the flipped classroom modality that combined e-learning materials with face-to-face sessions taking place every other week. The e-learning materials consisted of biweekly online modules and practice quizzes that students needed to review and submit prior to the face-to-face sessions designed to engage students in class discussions and hands-on activities. While a few students showed a modest level of engagement during the face-to-face sessions, the majority did not seem to be fully engaged or aware of the content in the online modules. To find out why, this study sought to research the reasons for this disengagement by investigating students’ perceptions of their engagement. A case study methodology consisting of a survey and three in-depth interviews with a purposive sample of students was used to collect data. The study concludes that students’ perceptions of a blended IL curriculum are impacted by the importance they attribute to the topics covered in IL. Results also suggest students’ preference for just-in-time, online, and asynchronous access to content with an optional face-to-face attendance that would help them learn about a skill when they need to use it.
1. Introduction

In the fall of 2013, the Education and Research librarian had the opportunity to design and integrate an information literacy (IL) curriculum in the English for Academic Purposes (EAP) course for premedical students. The course was part of the premedical curriculum of a branch campus of an American medical college in Qatar. Six years later, the IL curriculum has now become an integral component of the EAP course.

Advocating for the integration of IL in college curricula, the Association of College and Research Libraries (ACRL) developed core competencies that empower librarians “within their own knowledge domain” to develop an IL curriculum that aims to:

- “connect information literacy with student success initiatives; to collaborate on pedagogical research and involve students themselves in that research; and to create wider conversations about student learning, the scholarship of teaching and learning, and the assessment of learning on local campuses and beyond” (www.ala.org/acrl/standards/ilframework).

Based on this framework, the current IL curriculum was designed to develop premedical students’ basic research skills, strengthen their critical thinking abilities, and prepare them for lifelong learning. Students join the medical college from local schools that teach mainly in the Arabic language with barely any attention given to research and IL skills. Therefore, the IL curriculum was aligned to complement the EAP course and create a context for students to implement the new skills they acquired in IL.

IL uses a Blended Learning (BL) approach with a flipped classroom modality that combines e-learning materials with face-to-face instruction and integrates in-class activities that take place every other week. One week prior to each class session, an online module that aims to achieve two to three learning outcomes is made available to students. They are prompted to view the content, access online materials and submit a practice, ungraded quiz before the next class session. Face-to-face sessions start with a graded quiz that checks students’ understanding of the module content, followed by group activities and class discussions.

Based on class observations, a few students showed a high level of engagement during face-to-face sessions through discussions and group activities. Students would usually express their opinions, ask questions, and volunteer to answer questions. However, the majority of the students did not seem to be engaged in class or aware of the content covered in the online modules. Consequently, the same information was repeated in class over and over again, which called for this study to investigate the reasons for this disengagement. Therefore, this study aims to contribute to the knowledge base of college students’ readiness by exploring a relatively under-researched area: students’ engagement in an information literacy blended course. The results of this study hope to generally inform teachers, librarians, and administrative staff of other Transnational Higher Education (TNE) institutions of the challenges and opportunities of designing an integrated blended IL curriculum for first year non-English speaking students. The study would also be considered as the first one to address this topic in an Arab Gulf country with native-Arabic speaking students enrolled in a foreign American premedical programme.

2. Information Literacy in Medical Education, Blended Learning, and Student Engagement

This section will review literature on three main areas relevant to the topic under investigation. The first section will be used to critically analyse the available literature on developing IL for medical students. Section two will investigate the uses of BL for IL development. Section three will gather and critically appraise the available literature on student engagement in blended learning (BL) courses. Another potential area for discussion is the availability and accessibility to technology as an important aspect of this debate. However, this will not be covered in this study for two reasons. First, the limited nature and scope of this paper does not allow to delve into this topic. Secondly, due to the situated context of this study, the lack of technological infrastructure is not the issue since Qatar is considered among the top countries with 91.5% of individual internet usage and 98% of households with Internet access (www.motc.gov.qa, 2014).

2.1 Developing IL for Medical Students

2.1.1 IL Skills for Medical Students

IL skills have been deemed important for medical students for the last twenty years. When medical schools started adopting problem-based learning (PBL) - a learning approach developed in the 1960s by McMaster University Medical School (Blake, 1994), this pedagogical approach necessitated a new set of skills, the IL skills, and considered...
they essential for students’ critical thinking and lifelong learning abilities. A few years later, IL was considered among the five goals of the U.S. Department of Education’s ‘National Education Technology Plan’ (Virkus, 2003). While the beginning of this integration was cautious and timid, it did not stop librarians from stepping in to collaborate with faculty in providing basic library orientations and research skills (Corder et al., 2001). This collaboration proved to be critical later on with the ubiquity of technology and abundance of information in order to teach students critical skills in finding and evaluating relevant content (Bendriss et al., 2015). Nevertheless, more research on IL integration in premedical curricula is needed.

2.1.2 Integrating IL in the Curriculum

Several studies explored the integration of information literacy skills in medical curricula. For instance, a study by Haraldstad (2002) described the effort to develop an IL curriculum for medical students in their first and fifth years that focused mainly on evaluating information sources. The author identified the important role of starting the integration of IL early on in the medical programme and building on students’ knowledge to cover all the skills they need by the time they graduate. The study also argued the necessity to test students’ IL skills like any other clinical skills they need to master (Haraldstad, 2002). The results of this study still hold true in today’s medical education. This is reinforced by another recent study that shows that the earlier an IL intervention occurs, the more impact it can have on students’ ability to locate and access online resources, evaluate the information found, and use evidence-based resources (Kingsley et al., 2011). However, these studies did not uncover the challenges encountered by non-native speakers of English who have probably never heard of IL. Therefore, more information is needed to explicate situated IL practice with Arabic-speaking medical students of a TNE institution.

2.2 The Uses of BL for IL

2.2.1 BL for Enhanced IL Skills

The Macmillan dictionary defines BL as “a method of learning which uses a combination of different resources, especially a mixture of classroom sessions and online learning materials” (www.macmillandictionary.com). The BL approach was sought as a solution to the growing need of IL skills, budget constraints, and the urgency to reach out to students and faculty in a more direct, visible, innovative, and engaging way (Pankin et al., 2012). A recent study investigating students’ self-directed learning and communication skills confirmed that using a BL approach in an IL course improves students’ self-directed learning (Sriarunrasmee et al., 2015), one of the most important life-long learning skills that students need to develop as future global citizens. On the other hand, a study by Kong (2014) that investigated the design and implementation of a digital classroom to develop students’ IL skills and critical thinking abilities showed “statistically significant growth in domain knowledge, in the cognitive and meta-cognitive perspectives of IL competency, and in all five major perspectives of critical thinking skills” (p. 172). Clearly, blended learning plays a vital role in IL pedagogy.

2.2.2 Increasing Engagement Through Face-to-Face Encounters

While students prefer more online courses and fewer face-to-face sessions, allowing them more flexibility and asynchronous access to course materials, they also “lament having no face-to-face experience” (Dziuban et al., 2011), which calls for BL as a balanced approach to maintain their student-student and student-faculty interactions (Moskal et al., 2013). This human interaction remains essential to effective teaching and learning, especially with careful consideration of cultural milieu and learner dispositions, which these studies failed to explicate. A successful BL experience consists of a ‘face-to-face learning’ component where teachers and students meet in a traditional classroom setting; a ‘self-paced e-learning’ component where students have asynchronous access to learning materials through technology; and a ‘live e-learning’ component where teachers and students connect in real-time using technology (Van Dam, 2001, as cited in Sriarunrasmee et al., 2015). However, the results also suggested implementing more class time to increase students’ interaction and encourage discussions (Kong, 2014). This has been undoubtedly conducive to effective learning in the current class under investigation as students attempt to make sense of the online content through hands-on activities and peer discussions.

2.2.3 The Blended Librarian

When discussing BL and IL, it is also important to define the role of the ‘blended librarian’ who, according to Sinclair (2009), “is versed in both print and online tools and can help faculty meet course goals, regardless of the medium or technology” (p. 504). Therefore, the role of a blended librarian is to design, implement, promote, and assess educational opportunities that keep up with the “radical paradigm shifts occurring in society driven by the evolution of information technologies” (Shank & Bell, 2011, p. 105).
2.3 Student Engagement in Blended Courses

2.3.1 e-Learning and Students’ Self-Reflection

The ubiquity of technology in education has bolstered the combination of face-to-face and e-learning environments and provided students with additional engagement opportunities (Delialioglu, 2012). Many studies have argued the positive role of technology in leveraging student engagement. For example, Robinson and Hullinger (2008) encouraged the use of technology for asynchronous learning to allow more time for students to reflect on their learning and apply the new knowledge they acquire. Furthermore, Duderstadt et al. (2002) suggested the use of e-learning to improve higher order skills, such as critical thinking, collaboration, and problem solving.

2.3.2 e-Learning and Student Engagement

When designing e-learning content, effective modules include online collaborative activities (e.g., discussion boards) linked to learning outcomes from another course (transferable into other current courses) and contain assessment activities that evaluate students’ learning and provide them with an opportunity for reflection (Barker et al., 2007). However, in the absence of an online moderator to encourage and facilitate online collaboration, students who are not self-directed learners will not benefit from e-learning. In fact, they might even feel marginalized and disconnected, a concern left unaddressed in these studies.

2.3.3 It Takes More to Engage Students

Other studies underestimated the role of technology by stating that the success of BL should not be attributed to the use of technology (Means et al., 2009; Clark, 2009) but to the “alignment of institutional, faculty, and student goals” (Moskal et al., 2013). Alignment of these components is no doubt critical as it reflects sound course design in general. Yet, from a practitioner point of view, technology should be readily available when needed by teachers and students alike. It should also be considered as a tool rather than an end in itself and should be carefully tailored to serve the institutional mission, support curriculum, and foster student learning.

2.3.4 e-Learning and Reusable Learning Objects

In a recent case study exploring undergraduate and postgraduate students’ attitudes towards e-learning and BL, the survey results favoured the BL approach (McGuinness & Fulton, 2019) and encouraged the use of e-learning tutorials as “reusable learning objects, which can be accessed as just-in-time delivery modes, when students perceive they need to review particular skills or reinforce learning material” (p. 2). Yet, these reusable learning objects can be enhanced and made more relevant by adding a variety of learning materials that would support students’ learning styles and by providing examples that relate to students’ cultural context, experience, education, and interests.

2.4 The Gap in the Literature

The challenge that we usually face with the constant access and use of technology is getting students engaged both in the digital and face-to-face environments. Based on the review of the literature, this study aims at investigating students’ perceptions of the IL blended curriculum and understanding their attitudes towards the usefulness and application of IL skills. In the local context where this study took place, many schools still follow a teacher-centred approach where teachers are considered knowledge experts while students are passive learners, especially in some Gulf countries.

This perception of teaching and learning has therefore caused some difficulties for students transitioning into higher education where self-directed and independent learning is expected (Frambach et al., 2012). Based on this context — a TNE institution — and the background of the participants — first year Arab students enrolled in a premedical course of a branch campus of an American medical college in Qatar — student engagement should be explored to identify its core aspects and interpretations, especially in BL. Therefore, this study is an opportunity to fill a gap in scholarship on engagement in BL by Arab premedical learners in a TNE medical college in Qatar.

3. Theoretical framework

Although student engagement is considered a cornerstone in students’ success and achievement, reaching consensus on a clear definition of engagement remains a challenge. Initially, student engagement started with Astin’s (1984) theory of student involvement, which “refers to the amount of physical and psychological energy that the student devotes to the academic experience” (p. 518). Some studies argue that student engagement should be measured by collecting students’ perceptions of and interest in their learning activities, such as their interaction during class time and their interest in knowing more about a topic (Chapman, 2003). Other studies revealed that engagement...
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is manifested through students’ use of cognitive and metacognitive skills to self-regulate their learning (Pintrich & De Groot, 1990; Pintrich & Schrauben, 1992). This study uses the following student engagement three-dimensional framework (Fredricks et al., 2004; Trowler, 2010; Balwant, 2018): behavioural engagement concerned with students’ behaviour vis-a-vis completing the required work; emotional engagement which considers students’ self-report on their feelings, interest, and values; and cognitive engagement which can be measured through students’ motivation, their active problem-solving skills and organisation skills. For each dimension, each student can manifest a positive engagement, non-engagement, or negative engagement (Trowler, 2010).

3.1 Research Questions

Overarching RQ: What are the key differences and similarities between Arab premedical student engagement in the face-to-face component versus the online component of a blended information literacy (IL) curriculum offered at a branch campus of an American medical college in Qatar?

- RQ1: What are the perceptions of premedical students about their engagement in the biweekly IL face-to-face sessions?
- RQ2: What are the perceptions of premedical students about their engagement in the online component of the IL curriculum?

4. Methodology

The targeted population for this study is a purposive sample of a class of 17 premedical Arab students who were enrolled in the IL course for the academic year 2018-2019. This sample was chosen for its “fitness for purpose” (Cohen et al., 2018, p. 386) since these students have experienced the IL blended curriculum recently, which might provide some fresh insight and feedback to help inform this study.

Being aware of the challenges this study might produce and students’ level of comfort or, rather discomfort, when providing feedback, and in order to mitigate any inconvenience, the study was postponed until the end of the academic year, after final grade submission, to reach out to the students and get their feedback. Students were also reassured that the survey was completely anonymous and the study would have no impact on their performance.

The small number of participants, the focused topic under investigation, and the context in which this study took place necessitated a case study approach. A case study methodology is used “to portray, analyse and interpret” (Cohen et al., 2018, p. 188) a phenomenon that is taking place within a defined group of first year, premedical students. It is guided by the need to investigate how and why a particular issue has occurred (Anderson, 1993), describe the uniqueness of the problem, and provide a deep understanding of the reasons (Patton, 1987) behind students’ disengagement in a blended IL curriculum. Although it has been criticized for being unable to generalize findings (Johnson, 1994), a case study methodology will be used as a research methodology to investigate a ‘phenomenon’ (student engagement in a blended online course) ‘in depth and within its real-life context’ given that the “boundaries between phenomenon and context are not clearly evident” (Yin, 2009, p. 18).

5. Methods

Two methods were used to collect empirical data: a survey with closed and open-style questions and three in-depth interviews with three students. Qualtrics was used to create the survey and share it with all students. Students were made aware of the purpose of this study by sharing the study information sheet and consent form approved by the course convenor prior to starting the data collection. The first page of the survey explained the purpose of the study and asked students for their consent to participate, followed by nine questions. Then based on students’ answers, three in-depth interviews took place to collect additional information that could help evaluate the current situation and understand what needed to be reviewed and changed to increase student engagement in the online component of the blended curriculum.

A mix of Ahlfeldt, Mehta and Sellnow’s (2005) survey of student engagement (SE) and Dixson’s (2015) online student engagement (OSE) scale were used and adapted to the context under investigation. The SE survey was designed based on the National Survey of Student Engagement (NSSE) in the U.S. It was used to measure student engagement in the classroom and scored high on validity and reliability (Ahlfeldt et al., 2005). Therefore, this survey is used to draw a holistic picture of students’ attitudes towards and perceptions of their IL experience. Furthermore, the questions that were used in this survey address the three concepts of student engagement described in the theoretical framework section: behavioural engagement, emotional engagement and cognitive engagement (Fredricks et al., 2004; Trowler, 2010; Balwant, 2018). The survey consisted of nine questions: eight closed questions using a five-point Likert scale, and one open-ended question that allowed students to comment and provide some suggestions.
Following the quantitative results of the survey, three in-depth interviews that consisted of three questions collected qualitative responses from three volunteer participants. The questions addressed the changes that need to be implemented in the IL curriculum; the additional skills that need to be included; and students’ reasons behind their preference of online modules over face-to-face. The data from the interviews complemented the survey results and provided not only clearer explanations and insights into students’ perceptions and preferences, but also valuable suggestions.

6. Results

The following sections present the survey results using the three concepts of student engagement described in the theoretical framework section: behavioural engagement, cognitive engagement, and emotional engagement. The survey results are followed by the interview results that focused on three main themes: improving the IL curriculum, including new IL skills, and preference for online modules over face-to-face sessions.

6.1 Survey Results

The survey consisted of nine questions, eight closed questions using Likert scale and one open-ended question. Out of 17 premedical students enrolled in this course, 13 (76.47%) completed the survey. The detailed list of questions is provided in Appendix A.

6.1.1 Behavioural Engagement

Three out of five survey questions (Q1, Q2, & Q3) were of a behavioural nature. For Q1, “I check the online modules content on a regular basis”, over half of the participants agreed or strongly agreed (53.84%) while three participants disagreed (23.08%) and three (23.08%) were neutral to that statement (see Figure 1). This question reflects behavioural engagement, and when compared to the three dimensions discussed by Trowler (2010), it can be deduced that more than half of the participants manifested a positive engagement, while three participants were not engaged, and three participants showed negative engagement.

In Q2, “I submit the online quizzes on time”, all participants agreed (30.77%) and strongly agreed (69.23%) to this statement (see Figure 2).

Q3 inquired whether participants help their classmates complete the online modules and quizzes. This question intended to measure participants’ behavioural engagement and their interactions in order to complete the required task. More than half of the participants (53.85%) agreed to this statement; four participants (30.77%) were neutral; one participant disagreed (7.69%); and one strongly disagreed to this statement (7.69%) (see Figure 3).

Figure 1. Participants’ responses to Q1 show that 53.84% check the online modules regularly.

Figure 2. Most of the participants indicated that they submit the online quizzes on time.

Figure 3. Students’ responses to Q3 indicate that 53.85% agree that they help their classmates complete the online modules.

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Figure 3. Distribution of participants’ answers to Q3.

Figure 4. Distribution of participants’ answers on Q5.

Figure 5. Participants’ answers to Q6 (left) and Q7 (right).
6.1.2 Cognitive Engagement

Q5 measured cognitive engagement and collected participants’ perceptions of the usefulness of the IL skills when engaging in other courses. When asked to rate the following question, “I apply the IL skills to other courses (EAP, Biology, Global Health…), the majority of the participants agreed (69.23%) and strongly agreed (7.69%) while two participants were neutral (15.38%) and one participant disagreed (7.69%). The results show that integrating IL learning outcomes with other courses can be beneficial to increase participants’ awareness and practice of new skills.

Q6 and Q7 explored the cognitive dimension and implicitly collected students’ feedback regarding the usefulness of the face-to-face sessions in comparison with the “IL online modules”. The purpose was to indirectly investigate the correlation between the two methods of the blended IL curriculum. Q6 collected students’ perception of the class activities and whether students saw them as an opportunity to practice the content of the online module. Most of the students agreed and strongly agreed (61.54%) with this statement. Similarly, in Q7, “I find the class activities a chance to understand some concepts that were not clear in the online modules”, most of the participants agreed to this statement (69.23%).

6.1.3 Emotional Engagement

Q4 was written to collect participants’ emotional engagement in the IL course and, therefore, their perception of its value in their everyday life. In response to “I find the IL course materials relevant to my life”, two participants (15.38%) disagreed with this statement, five participants (38.46%) were neutral, five participants agreed (38.46%) and one strongly agreed (7.96%) (see Figure 6). These results suggest that more examples from everyday information seeking and evaluation should be integrated in the future to allow participants to value or appreciate the transferability of these skills into their daily quest for information.

Q8 and Q9 investigated the emotional dimension of SE. For Q8, students were asked to choose which of the two methods they preferred. It appeared that most of the participants (69.23%) preferred the online modules whereas four participants (30.77%) liked both methods. When asked to explain their choices in Q9, nine students’ answers came as follows:

“It is accessible anywhere and informational.”
“It’s more knowledge over less time. “Studying smart”. Online is just as effective as face to face.”
“I don’t like the face-to-face sessions, but I like the assignment given as it acts as a practice. I don’t like that IL is graded.”
“The IL sessions were too long for the modules and the online modules are more beneficial because it does not pressure students into spending more than an hour on a citation skill.”
“It gives me a chance to learn the topic on my own time and pace, as we have a very stressful schedule.”
“They’re easy to follow and understand so we don’t really need to come here at 8 in the morning for a repetition of the same content.”
“Because the online modules are faster and there won’t be a need to make face-to-face sessions if one understands the online modules, which is what happened to me this year.”
“They are quick and easy to understand.”
Four students indicated that they “like them both” for the following reasons:

“I like the online modules because they give an introduction to the concept that are going to be explored during the face-to-face sessions. This allows for a better understanding of the material which enhances the learning process and prepares the students ahead of time.”

“To practice and understand some concepts that were not clear in the online modules.”

“Because each has an advantage and disadvantage.”

“They are both beneficial in a way that if people read online modules and do not understand they can ask questions during face-to-face sessions.”

### 6.2 Interview Results

The aim of the interview is to investigate the extent of engagement in the IL course, especially the online modules. The detailed interview questions (IQ) and answers of each participant are available in Appendix B. The interview data is presented based on the following three main sections: improving the IL curriculum; additional skills that need to be included; and students’ preference for online modules over face-to-face. The theoretical framework’s engagement dimensions are described and linked where appropriate to provide a clearer explanation of students’ answers.

#### 6.2.1 Improving the IL Curriculum

IQ1 aimed to understand what changes need to be implemented in the course to make it more relevant to students’ daily life. Students’ answers provided three different perspectives that are equally important, and each perspective touched on one of the three SE dimensions.

Participant 1 (P1) found that the examples used when teaching a specific skill “might be out of context” and uninteresting or dull for the students which can be linked to the cognitive engagement dimension of the SE theory. P1 provided the example of scholarly versus popular resources and how students do not use print magazines anymore, which might be confusing for students. P1 suggested using examples from social media, such as Instagram and Twitter, and other widely used digital platforms and commercial websites to show them good and bad examples. P1’s answer came as a surprise as the current curriculum did not consider including social media, which is essential with today’s student population.

For P2, the content was 100% spot on. P2 even gave an example from a recent encounter describing how the skills taught through IL were used to decide to “join a diet centre” and checking out the credibility of the vendor. P2 also mentioned that some senior college peers made her realize the importance and applicability of these skills in their everyday study habits and daily life in general. The interviewee explained,

“I also know from my friends, one in premedical 2 year and the other one in medical year, that they are using these skills extensively in their studies too as they become part of their daily research and studying behaviour.”

This comment depicts the student’s behavioural and cognitive engagement and is in line with the findings of an earlier study by Kingsley et al. (2011), which confirms that IL skills should be integrated early in the curriculum in order for students to acquire these skills and adopt them in their daily learning habits.

P3 had a more of a middle ground approach where he thought that the way some of the modules were developed made them more relevant than others. He added,

“On the very first day of the IL course, you told us a story about a famous doctor who lost his medical license for fabricating research data and I think this story stuck with all of us. Things like that help us see the importance of these skills.”

This statement can be linked to the emotional engagement dimension of the theoretical framework that underpins this study.

#### 6.2.2 Including New IL Skills

IQ2 asked participants to suggest other skills that they wanted to be included in the IL curriculum.

P1 found that IL provided several transferable skills into other courses and suggested introducing some skills on how to prepare scientific reports.

For P2, the skills were comprehensive and easily transferable to other courses and had no suggestions. As a follow-up question, when mentioning to P2 that another participant suggested adding a skill on how to prepare a scientific report, and if she felt the need for something similar, P2 answer was:
“Depending on the schools we are coming from, some students might need a different set of skills. For example, I know how to create a lab report and include all the sections (intro, aim, subject, title, picture, etc.) as I have done this at school, but I know that some classmates were struggling with that.”

P3’s answer resonates with P1 as he also suggested collaborating with the Biology instructor to design a session on how to put together a lab report as the requirements for formatting and style were confusing.

6.2.3 Preference for Online Modules Over Face-to-Face Sessions

Participants’ answers to IQ3 provided insights about students’ preference for online modules over face-to-face sessions. Based on the survey questions, the majority of the students confirmed that they found the face-to-face sessions an opportunity to practice the content of the online modules and checked their understanding of some of the concepts covered online. All participants’ answers to this question can be linked to their emotional engagement with the blended course since it taps into their feelings, interest, and values.

P1 and P2 explained their preference for online modules since “face-to-face sessions were in the morning!” However, both participants found the face-to-face sessions important to “familiarize ourselves with the topic” (P1) and “when we are in the classroom we HAVE to do it because the instructor is there, while if it is online we think we can do it anytime and sometimes we never do” (P2).

P2 also suggested we only use online modules unless there is a big assignment or new skill that necessitates a face-to-face session, such as a literature review. This is also in line with P3 who thought that while “the face-to-face sessions should be compulsory,” some other simple skills can be taught through the online modules, such as in-text citations.

P3 also suggested having the online modules as a backup for students to refer to when they need. In fact, this was shown in a recent study by McGuinness and Fulton (2019) where they argue for making e-learning tutorials “reusable learning objects” for students to access when they need to reinforce a certain skill.

7. Discussion

Results from the survey and interviews will be discussed in relation to the relevant literature.
What was intriguing was that two of the three interviewed participants explained that they preferred the online component as it gave them flexibility in accessing the modules. However, they also confessed that the idea of having the online modules available anytime encouraged some students to procrastinate and subsequently fail in checking the content before the face-to-face session.

Nevertheless, the interviewees provided some useful suggestions to enhance the content of the IL modules.

Teaching in a medical school leads to the assumption that what needs to be covered should fall into the academic, scholarly realm. However, results from the interviews provided an emerging interest in the use of social media in future curriculum and instructional design. Students suggested replacing the module on ‘evaluating scholarly and popular resources’ with evaluating social media tools and showing students good and bad examples. Other suggestions were more aligned with students’ academic needs such as ‘preparing a scientific report’ and formatting a ‘lab report for Biology course’. What can be concluded from the collected data is that the IL curriculum needs to be revisited to include new emerging skills that students use in their everyday life, particularly the ubiquitous social media that the digital natives use daily.

### 7.3 Overarching Research Question

The overarching RQ — *What are the key differences and similarities between Arab premedical students’ engagement in the face-to-face component versus the online component of a blended information literacy (IL) curriculum offered at a branch campus of an American medical college in Qatar?* — is formulated to draw a clear conclusion about how to improve the IL curriculum.

Through the analysis of the collected data, it is found, that students prefer the online component for its flexibility and asynchronous accessibility and perceive themselves to be more engaged in it. They also found that the face-to-face sessions are a repetition of the online modules and can be reduced to a minimum. However, the data also suggest that students still need the face-to-face component to put into practice the skills learned in the online modules, interact with their peers and collaborate as a tool to internalize the learning process, and finally, have access to the teacher interaction where they can ask questions pertaining to the learning materials.

### 7.4 Study Limitations

Other aspects of student engagement that were not addressed in this study due to its scope need to be investigated in future studies, such as the shifting role of the teacher as a moderator of the e-learning experience. This role is crucial to the success of BL, especially when students are not self-directed learners and unaware how to benefit from e-learning.

Another important tool that needs to be investigated is what McGuinness and Fulton (2019) call “reusable learning objects” (p. 2). These objects or artefacts should be created and made available online to provide students with skills and knowledge when needed. Students’ access and use of such objects can be tracked to assess the usefulness and appropriateness to their academic level.

### 8. Conclusion

Being digitally literate does not imply being information literate. Today’s learners need to be equipped with skills to critically evaluate the endless deluge of information and effectively use it not only in their educational pursuits but also for lifelong learning. To contribute to this endeavour, this study investigated Arab premedical students’ perceptions of a blended IL curriculum integrated in an EAP course at a branch campus of an American medical college in Qatar. The study collected students’ feedback by providing them with an opportunity to voice their opinions and give suggestions through a survey and interviews. The feedback would assist in redesigning the course learning outcomes and enhancing the online modules as well as the face-to-face component.

This study contributes to the current literature on student engagement through the integration of IL in higher education and the use of technology in delivering a blended learning experience to first year Arab premedical students. The study concludes that students’ perceptions of a blended IL curriculum are impacted by the importance they attribute to the topics taught in IL. They seem to prefer just-in-time, online and asynchronous access to content with an optional face-to-face attendance that would help them learn about a skill when they need to use it. Furthermore, the findings of this study contribute to the literature on online and blended learning by stressing the importance of accommodating students’ preference for online asynchronous learning, while also providing them with the choice of attending face-to-face, synchronous sessions, be it online or in-person.

Based on these findings, the IL curriculum should be revised and tailored to the specific needs and the unique context where teaching and learning take place. It is im-
important to provide a well-rounded learning experience to students that carefully considers their environment, culture, and previous education experience. An asynchronous course format with non-compulsory online live sessions might be the answer to a flexible approach to online and blended learning. This format should be investigated in future studies to assess whether it accommodates students’ engagement preferences and supports the contextual circumstances that might occur in higher education.

Finally, it is worth mentioning that this study took place right before the pandemic outbreak and the emergency learning situation that was imposed mid-March 2020. Therefore, the results of this study will be useful in guiding the development and delivery of the next IL curriculum, and future studies can be undertaken to assess the success of an online, asynchronous learning approach for the IL curriculum.

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Appendix A. Survey Questions

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<td>1. I check the online modules content on a regular basis.</td>
<td>Behavioural</td>
</tr>
<tr>
<td>2. I submit the online quizzes on time.</td>
<td>Behavioural</td>
</tr>
<tr>
<td>3. I help my classmates complete the online modules and quizzes.</td>
<td>Behavioural</td>
</tr>
<tr>
<td>4. I find the IL course materials relevant to my life.</td>
<td>Emotional</td>
</tr>
<tr>
<td>5. I apply the IL skills to other courses (EAP, Bio, Global Health…).</td>
<td>Cognitive</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>II. Face-to-Face Sessions</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>6. I find the class activities a chance to practice the content of the online module.</td>
<td>Cognitive</td>
</tr>
<tr>
<td>7. I find the class activities a chance to understand some concepts that were not clear in the online modules.</td>
<td>Cognitive</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Improving the IL Curriculum</th>
<th></th>
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<tbody>
<tr>
<td>8. Which of the two methods do you prefer?</td>
<td>Emotional</td>
</tr>
</tbody>
</table>

Appendix B. Interview Questions and Participants’ Answers

The aim of this interview is to investigate the amount of engagement in the IL course, especially the online modules.

1. When students were asked whether they find the IL course materials relevant to their lives, their answers were divided: half of them agreed and the other half disagreed. What can I do to make IL course materials more relevant to your lives? (Note to interviewer: Explain what I mean by relevance to life to avoid any confusion).

Responses:

**P1:** The modules were relevant because, for instance, yesterday I was joining a diet centre and they sent me a link to proceed with payment, but I wasn’t sure if this website was a legal one, so I googled the company, checked that the links are working, looked at the url. Another example is that of these nutrition videos they send over social media about healthy drinks for weight loss, so now I know that I can go to PubMed or WebMD to look up the information and ingredients used.

I think the students did not clearly understand this question in the survey, because now you explained it to me in a clear way.

I also know from my friends, one in premedical year and the other one in medical year, that they are using these skills extensively in their studies too as they become part of their daily research and studying behaviour.

**P2:** The modules were relevant because, for instance, yesterday I was joining a diet centre and they sent me a link to proceed with payment, but I wasn’t sure if this website was a legal one, so I googled the company, checked that the links are working, looked at the url. Another example is that of these nutrition videos they send over social media about healthy drinks for weight loss, so now I know that I can go to PubMed or WebMD to look up the information and ingredients used.

I think the students did not clearly understand this question in the survey, because now you explained it to me in a clear way.

I also know from my friends, one in premedical year and the other one in medical year, that they are using these skills extensively in their studies too as they become part of their daily research and studying behaviour.

2. One of the questions inquired whether students apply the IL skills to other courses in their program (EAP, Bio, Global Health…), and the majority of the participants agreed with this statement. I would like to know from you what other practical or helpful skills you would like to learn through IL that would be applicable to other courses?

Responses:

**P1:** The IL course covered a lot of skills that were transferable to other courses and it helped us a lot especially with citations. One thing that I would like to suggest to include in IL is how to write and format lab reports because we use this in chemistry and biology.

**P2:** I did use the IL skills in other courses. For example, in the biology report on cat dissection and in the Global Health course, we had to choose between using MLA or APA as long as we remain consistent, and I was able to put...
into practice this skill that I learned during IL. Also for the chemistry report, we need to summarize and cite resources and I was able to recall and use these skills from IL.

Depending on the schools we are coming from, some students might need different set of skills. For example, I know how to create a lab report and include all the sections (intro, aim, subject, title, picture…) as I have done this at school, but I know that some classmates were struggling with that.

P3: I would suggest you ask the Biology instructor to give you previous lab reports to be used as example or template for us to start a new one. The Biology instructor wanted us to use APA style but she had it customized to her preference which made it a little confusing for us. It will be very helpful if you can explain to us the style used for a lab report and help us start putting one together during your class.

3. Most of the students answered that they prefer the online modules over face-to-face (they find face-to-face redundant, unnecessary while online modules are quick, easy to understand). However, most of them also found that the face-to-face sessions were an opportunity to practice the content of the online modules and check their understanding of some concepts that were not clear in the online modules. What do you think about this contrast in their answers? Can you think of reasons why? (short attention span, intensive schedule, lack of interest…)

Responses:

P1: Because face-to-face sessions were in the morning. Personally, I find the face-to-face very helpful. The online modules give us the basics, introduce the concept and we get the chance to do small homework and familiarize ourselves with the topic but face-to-face make us understand more by putting everything together. We can also ask question directly, and the instructor can make sure that we understand the module.

The only drawback is time. I understand why my classmates were aggressive about this question because it is hard to wake up early and arrive at 8 am.

P2: It is a morning session! Face-to-face were useful especially the literature review session. It was very important and necessitated a face-to-face session. Face-to-face sessions should be used for big assignments and new skills like this, and when we are in the classroom we HAVE to do it because the instructor is there. While if it is online we think we can do it anytime and sometimes we never do.

P3: The search techniques had an online module and a face-to-face session and I found the face-to-face session much better. In fact, I think the face-to-face sessions should be compulsory. However, for some other skills like how to do in-text citations, an online module would be sufficient and can be used as a backup for students to consult when they need to use it.
Student engagement in online and blended learning in a higher education institution in the Middle East: Challenges and solutions

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Abstract

This paper aims to identify challenges to students’ engagement in online learning at the Qatar branch campus of America’s Georgetown University, and to propose solutions. Specifically, it: 1) identifies challenges and solutions from students’ perspectives; 2) provides recommendations for developing instructional policies to maximise student engagement in synchronous learning contexts; and 3) aims to contribute to the literature on the engagement of Arabic as a Foreign Language (AFL) learners and Arabic Heritage Learners (AHLs) in online learning in higher education (HE) in the Middle East. It did so by collecting qualitative data, using an open-ended questionnaire from 13 Arabic as a Foreign Language and Arab Heritage learners. We investigate these learners’ perceptions and experiences of student engagement in online learning within the social presence dimension of the Community of Inquiry (CoI) framework. In addition to presenting a set of challenges that our students experienced in their online learning, especially under the unprecedented health, social and mental constraints created by Covid-19, we highlight their solutions to these challenges. We conclude by offering a set of recommendations that we hope AFL and Arabic Heritage (AH) programmes and institutions will find useful.
1. Introduction

In the past twelve months (2020-2021) there has been a massive shift to online distance learning due to the coronavirus pandemic (Covid-19). This has led to a dramatic change in global education, whereby – according to statistics from the World Economic Forum (2021) – 1.2 billion school and university students in 186 countries have been affected as governments have closed educational institutions.

In recent years, online and distance learning have emerged as a convenient medium of learning for busy or overseas students and an exceptionally productive opportunity to sharpen research and independent thinking skills. Many universities offering online learning programmes provide websites that their potential students, who are both self-motivated and independent, can use for their learning. However, online and distance learning programmes sometimes fall short when it comes to outlining the scope of courses or the expectations placed on online students in concrete terms (Kandiko & Mawer, 2013; Parkinson & Forrester, 2004). Moreover, despite the potential value of the online learning context for both learners and instructors, there may be a general preference for conventional face-to-face learning rather than online education (Mann & Henneberry, 2014; Stodel et al., 2006). This may be because most university students are experiencing online learning for the first time and feel unprepared to use the large number of applications available, potentially resulting in poor course retention and progression. In addition, due to lack of online teaching experience/training, some teachers have simply brought their traditional teaching methods to the online mode during Covid-19, which may negatively affect students’ online learning and lessen their online class engagement.

Georgetown University in Qatar (GU-Q) is a branch campus of Georgetown University in Washington, DC in the United States that offers a Bachelor of Science in Foreign Service. It is located in Education City in Doha, Qatar, which belongs to Qatar Foundation for Education, Research and Community Development (QF). The Arabic programme at GU-Q offers two elective course tracks for Arabic learners: one for non-native speakers who seek to learn Modern Standard Arabic (MSA), and the other for AHLs, whose mother tongue is one of the dialects of Arabic but whose MSA productive skills, i.e., speaking and writing, need further development. From March 10th, 2020, GU-Q – like other educational institutions in the country – had to transfer instruction from face-to-face into an online and/or blended learning mode because of the outbreak of Covid-19. Following school closure, some instructors continued to apply the face-to-face syllabus designed for Spring 2020 and did not modify their mode of delivery during the early phases of Covid-19 breakout. During the Spring 2020 term (the remaining period of March and April 2020), faculty members who maintained instructional continuity through the use of online platforms shared concerns about the level of student engagement in their courses. Since Fall 2020, and until writing this paper (Spring 2021), GU-Q has given instructors and students a choice between online and blended learning modes, subject to there being full adherence to the Covid-19 precautionary measures set out by Qatar’s government. This situation has arisen due to the sudden outbreak of the corona pandemic, instructors not having attended faculty training for online/blended teaching, and the university not providing instructions on coaching students in matters related to cyber ethics/etiquette and using online learning platforms. Instructors assumed that their students were competent in using online platforms and would quickly master any digital learning tool.

The aims of this study are:
1. to gain a deeper understanding of the key challenges faced by online AFL learners and AHLs, within the social presence dimension of the CoI framework, that impact their online engagement in Arabic courses at GU-Q;
2. to gather insights into the range of solutions they propose based on their first-hand experiences and perceptions; and
3. to recommend, in light of these perceived challenges and solutions, some measures that may benefit AFL and AH instructors in similar educational institutions and contexts, and indeed HE educators more broadly.

2. Theoretical framework

This study employs the Community of Inquiry (CoI) framework proposed by Garrison, Anderson and Archer (2000), which is the most widely used framework in teaching and learning in online environments (Akyol et al., 2009). The CoI framework provides a structure and meaning-making process for examining the learning environment within online and blended learning settings through the interaction of three main elements: cognitive presence, social presence (which is the focus of our current study) and teaching presence (Garrison et al., 2010).

According to Garrison et al. (2001), ‘cognitive presence’ is “the extent to which learners can construct and confirm meaning through sustained reflection and discourse” (p. 11).
In online learning, this can occur when the instructor creates a learning environment where students engage in a high level of thinking through collaborative communication (Shea & Bidjerano, 2009).

The second element, ‘social presence’, is defined as “the ability of participants in the CoI to project their characteristics into the community, thereby presenting themselves to the other participants as ‘real people’” (Garrison & Archer, 2000, p. 97). Here the primary goal is to enhance cognitive learning by sustaining critical thinking in the CoI and making interactions more enjoyable within a virtual community by participants’ expression of themselves (Rourke et al., 1999). Waters and Gasson (2006) - in their paper entitled ‘Social Engagement in Online Community of Inquiry’ which was inspired by Garrison et al. (2001) - defined social engagement as an “active commitment to the social facilitation and direction of the community learning process.” (p. 5). Such a commitment should be demonstrated by both teachers and students.

The third element, ‘teaching presence’, is defined as “the design, facilitation and direction of cognitive and social processes for the purpose of realising personally meaningful and educationally worthwhile learning outcomes” (Vaghjee & Panchoo, 2016); it facilitates both social and cognitive presence. In the CoI, “learning occurs within the community through the interaction of these three core elements” (Garrison & Archer, 2000, p. 88).

Social presence is also described as the “degree to which participants feel effectively connected to one another” (Kozan & Richardson, 2014, p. 69). Garrison et al. (2000) say social presence has three sub-categories. The first is ‘affective expression’, which refers to emotional expression consisting of “humour expression and self-disclosure of personal information” (p. 99). The second is ‘open communication’, which refers to free peer interaction with other classmates through conversation and question-asking (Fornara & Lomicka, 2019). This occurs when students feel they co-exist in a risk-free learning environment where they can trust each other to reveal themselves (Boston et al., 2009) and can have “reciprocal and respectful exchanges” (Garrison et al., 2000, p. 100). The third sub-category of social presence is ‘group cohesion’, which manifests itself in building and sustaining a sense of group commitment (p. 101), where students comfortably collaborate and acknowledge each other’s opinions respectfully. This helps them to build trust and to disagree with each other freely (Smith, 2018).

Although Garrison et al. (2000) define teaching, cognitive and social presence as the core elements for successful engagement in an online learning context, they suggest that social presence may prove to be the key element, affecting teaching and cognitive presence. They argue that social presence is key to higher-order thinking in online learning and teaching. Other studies have stressed the value of social presence for broader learning objectives (Garrison & Akoyl, 2013). Potentially, it positively impacts students’ active learning (Molinillo et al., 2018) and satisfaction in online courses (Grieve et al., 2016), and promotes student engagement (Dixon, 2010).

3. Literature review

This section reviews a range of sources that examine factors, challenges and solutions that university students are likely to experience as they engage actively in online learning.

3.1 Online and hybrid learning

Online education in the university context is divided into different categories by different authors, with the proportion of course content online determining the type of online learning. According to Allen and Seaman (2016), an online course is one where content, interaction and assessment are done mainly online and at least 80% of the content is conducted online; traditional face-to-face education has no more than 29% of course content delivered online; and classes with up to 80% of course content delivered online may be termed ‘blended’ or ‘hybrid’. Dixson (2010), however, suggests that hybrid courses are those that integrate face-to-face sessions with 50-70% of online activities and assessment.

3.2 Social presence: Challenges and solutions

Robinson and Hullinger (2008) found that working actively with peers is a major factor in determining collaborative online learning success. Likewise, O’Shea et al. (2015) found, in their qualitative study of the challenges Australian students faced when studying online, that some students perceived social presence as a significant factor promoting online learning. In addition, Shea et al. (2012) claimed that when students learn collaboratively in an online learning environment they build stronger relationships as peers.

A common challenge among online students is a feeling of social isolation and loneliness (Allen, 2014; Haynes et al., 2012), resulting from a lack of peer communication, which may lead to students dropping out of the course (Vaghjee
Famularsh (2020), who investigated students’ experiences in using online learning applications for English as a foreign language under Covid-19, concluded that poor internet connection, insufficient interaction, and anxiety using the target language (TL), i.e., the language being learnt, were major challenges for the participants. Likewise, Shahzad et al. (2020) emphasised that slow internet connection was one of the challenges facing ESL postgraduate students in Pakistan. Bailey and Lee (2020), who studied the online learning experience under Covid-19, identified challenges such as using new technology in learning; anxiety and sharing content in TL; and the importance of finding the appropriate Learning Management System (LMS) or platform to fulfil students’ needs (Gillett-Swan, 2017).

### 3.2.1 Affective expression

Many researchers (for example, Brown et al., 2015; Bawa, 2016; Allen, 2014; Haynes et al., 2012) have investigated the challenges of building dynamic collaboration and a sense of belonging and relatedness in online education. Bolliger and Martin (2018) show that engaging students in meaningful collaborative online activities promotes their feelings of belonging in the class community. Such a sense of belonging productively facilitates the learning process (Cai, 2017).

Online learning and coping with a new mode of study can present several challenges for college students related to using technology skills, and the anxiety associated with using online learning platforms can undermine learners’ performance and confidence (Bawa, 2016; Bonk et al., 2015; Dews-Farrar, 2018). The change to an online delivery medium reduces information transmission and the chance for students to practise what they learn, while the instructor’s role shifts from teaching to facilitating the learning process (Kebritchi et al., 2017). Where this happens, the online learning environment becomes an undesirable medium for knowledge transmission, especially if there is no sense of belonging or peer engagement (Wallace, 2003), and needs to be complemented by students doing peer facilitation, as Lan et al. (2007) suggested.

Although the shift from a face-to-face learning environment to learning online may be beneficial for some learners, who have elsewhere perceived it as “a versatile medium for the delivery of educational programmes ‘anytime, anywhere’” (Garrison et al., 2000, p.87), it can create challenges for learners in different countries when an online course spans several time zones (Anderson, 2004). This may lead to students falling asleep during class or shifting their schedule of weekends and holidays (Battro et al., 2008), making it harder for learners to be fully engaged in their online studies. Moreover, learning through the online medium involves some health risks, such as eye strain from reading e-books or working on digital devices (Jeong, 2012), and general fatigue (Culpepper, 2015).

Krishan et al. (2020) highlight the importance of cues such as facial expressions and eye contact for building bonds among online English learners under Covid-19. The potential absence of these social cues in online classes can (Pi et al., 2017) negatively impact students’ social engagement, which Waters and Gasson (2006, p. 5) define as an “active commitment to the social facilitation and direction of the community learning process”. Meanwhile, human interaction is improved when students turn on their video conferencing cameras to see each other in the online learning context (Conrad, 2015).

### 3.2.2 Open communication

Intimidation appears to be one of the challenges of online learning, especially when students are new to such a learning environment (Nippard, 2005) and there is a lack of trust between peers and therefore less engagement among them during discussions and debates. Intimidation also manifests itself when students perceive their peers as having a greater understanding of the topic discussed or dominating the online class debate (Cleveland-Innes et al., 2007).

To date, there are relatively few studies investigating the impact of the shift to online learning in higher education during the Covid-19 pandemic in relation to students’ social presence as part of the CoI framework. The only study to employ the CoI framework and specifically explore social presence (Holmes et al., 2020) was conducted in relation to master’s-level counsellor educator learning, and compared students’ perceptions of social presence in online and on-campus courses. The findings suggested that adult learners perceived social presence in a face-to-face course as better developed than in online settings.

### 3.2.3 Group cohesion

Group cohesion and mutual trust are significant factors in promoting engagement in the online classroom (Wang,
Studies in Technology Enhanced Learning, 1(2)

2007). Large group size and different time zones can negatively affect the learning process and create group incoherence in synchronous classes (Mucundanyi, 2019), while small class size has a positive impact on “sociability, social space, and group cohesion” (Akcaoglu & Lee, 2016, p. 13).

Shaker (2018) conducted a mixed-method study, which was not conceptualised within the CoI framework, on factors affecting the engagement of non-native learners of Arabic in a self-paced MOOC (massive open online course). He found that the “mode of delivery of instruction” is one of the key factors affecting student engagement in online courses (p. 2). Aguilera-Hermida (2020) and Schulze and Scholz (2018) claim that language college students prefer face-to-face over the online mode of delivery because they find it challenging to adapt to the online learning mode. Face-to-face may also lessen students’ anxiety and promote ‘peer learning’ (Bruland, 2013).

Other studies have focused on suggesting strategies for successful online discussions and improving student engagement. To facilitate student discussion online, Woods and Bliss (2016) suggested forming smaller working groups to help manage discussion threads, integrate reflective assignments that enhance peer interaction, and provide timely constructive feedback. Rourke and Anderson (2002) also found that students who lead the group discussion online benefit from monitoring their peers.

### 3.3 Online learning and students of Arabic

In this study, we aim to address the challenges AFL learners and AHLs have faced regarding their learning engagement in their first online Arabic course, and their suggested coping strategies, through the lens of social presence as part of the CoI framework. Although there has been extensive research into the issues the current paper explores, we have found very little research investigating the role of social presence in engaging AFL learners and AHLs in online courses. This study fills a gap in the literature by identifying challenges and coping strategies based on the experiences of these students of Arabic, which is one of the least investigated languages in online studies (Shaker, 2018).

Our paper is distinctive in being based on qualitative data collected from students who have experienced first-hand the issues around social engagement under the unique health and mental constraints imposed by Covid-19. It identifies these students’ perceptions and experiences using the CoI framework (Garrison et al., 2000), adding sophistication to our understanding of this framework and contributing to the literature on technology-enhanced learning in the Middle East within the CoI framework – a link not often made concerning online teaching, and one that stands to benefit the wider online education community.

### 4. Research questions

- **RQ1**: What are the challenges that AFL learners and AHLs at GU-Q – as a higher education institution in the Middle East – face regarding their engagement in the online learning context within the social presence dimension of the CoI Framework?
- **RQ2**: What solutions and recommendations do these learners propose for overcoming these challenges?

### 5. Methodological framework

This paper is a small-scale study employing the case study approach (Stake, 1995; Merriam, 1998). It identifies the participants’ perceptions and experiences regarding the challenges they have faced in engaging in online AFL and AH courses and their proposed solutions for overcoming these challenges. It has done so by collecting qualitative data from GU-Q AFL learners and AHLs, using an open-ended, structured online questionnaire that asked students to identify one example of a challenge and a solution to it under the three aspects of social presence: affective expression, open communication and group cohesion. The questionnaire (see Appendix 1) consisted of seven questions modified from the CoI survey (CoI, n.d.). The three questions under ‘affective expression’ addressed: their sense of belonging in the course; forming distinct impressions of coursemates; and online or web-based communication as a medium for social interaction. The two questions under ‘open communication’ tackled: students’ comfort with talking/conversing through the online medium, and their comfort participating/interacting in course discussions. The two questions under ‘group cohesion’ focused on: students’ comfort with disagreeing with other course participants while maintaining a sense of trust in them, and their feeling comfortable that other classmates acknowledged their points of view.

The exploratory nature of the research questions and our need to collect qualitative data to answer them required that we use a ‘purposive’ sampling approach (Robson & McCartan, 2016, p. 281). In general, 103 AFL learners and 141 AHLs were enrolled in the academic year 2020-21. After consulting with the instructors, they discouraged us from sending the questionnaire to all these students as they were bombarded with completing surveys on other topics and rather recommended, we send it to 64 students in their online course.
Student engagement in online and blended learning in a higher education institution in the Middle East

Institutional Review Board (IRB)’s approval, we emailed the questionnaire including the consent form, in English, on Google Form, to these students, who were attending five AFL and AH courses. The authors received and thematically analysed responses from 13 AFL learners. Ten of them were at the elementary or intermediate language proficiency level, according to the American Council on the Teaching of Foreign Languages (ACTFL, 2021); the other three were AHLs at the advanced level. The AFL learners were studying synchronously six-hour credit course per week, while the AHLs were taking a three-hour credit course that used both synchronous and asynchronous modes. We used thematic analysis (Braun & Clarke, 2012) to analyse the qualitative data emerging from the participants’ responses. Following the steps recommended by Braun and Clarke, we first familiarised ourselves with the data by reading it more than once; we identified the ‘latent codes’ (p. 61) manually rather than identifying them using software such as Nvivo. This enabled us to read between the lines and dig deeper into the data. Finally, we identified themes in response to the research questions regarding the challenges our students faced with engaging in online Arabic courses and their suggested solutions.

6. Key findings

The following themes emerged from our thematic analysis of the participants’ responses on the three aspects of social presence in the CoI Framework: affective expression, open communication and group cohesion.

6.1 Affective expression

6.1.1 Sense of belonging in the course

Student recommendations: Our students suggested creating a blended, welcoming learning environment; having small size classes; conducting more engaging, comfortable class activities; switching between synchronous and asynchronous learning modes; and doing task-based activities to overcome the intimidating digital set-up; large class size; intense, disengaging content; and differences in time zones, which they perceived as obstructing them from developing a sense of belonging.

The first challenge students described was the nature of the learning environment and its being online. Due to their being used to face-to-face instruction, some of them found online learning sometimes ‘very intimidating’ (Student 11), especially at the beginning of the course. They recommended that instructors make the learning environment comfortable by giving students time to adapt to this new environment. They also suggested that instructors deliver ‘hybrid classes’ and be ‘welcoming’, and that students ‘get together outside classes…[for] fun’ (Student 2), though presumably not face to face. They also saw large class sizes and disengaging content as challenges to building their sense of belonging in the online course. One (Student 5) said ‘[In small classes] we all knew each other.’ They described having difficulty when the instructor taught too much new content in the online class, especially when engaging, interactive activities were not used. They suggested having small class sizes, and that instructors conduct ‘more discussions and debates’ (Student 7) in addition to fun activities and games. To cope with large classes, they suggested that instructors enable students to get to know and ‘become comfortable with one another’ (Student 11) through working in pairs and small groups and doing language activities that enabled them to socialise and develop friendships. The time zone difference was a challenge for some students who had to attend class ‘at odd hours’ (Student 9), and it was difficult for them to adapt. As Shea and Bidjerano (2009) proposed, our students recommended asynchronous, task-based and collaborative activities to overcome this challenge.

6.1.2 Forming distinct impressions of coursemates

Student recommendations: Our students proposed turning their device cameras on; conducting warm-up speaking activities; using pair work; and forming chat groups to address the lack of peer interaction, which got in the way of their forming distinct impressions of online coursemates.

This challenge sprang from a couple of factors. First, some students did not turn their cameras on, which meant their peers could not see their facial expressions while they were communicating with each other, thus constraining their engagement with each other as humans (Garrison & Archer, 2000). That created a big challenge, especially for first-year students who were in their first semester ever. For example, Student 3 said: ‘It was difficult to form a distinct impression of coursemates whom I had not previously met in person.’ Students suggested there needed to be a policy that all students should turn their cameras on throughout class time. Another factor was that instructors did not allow enough time for students to break the ice and get to know each other well. Students therefore suggested that instructors conduct warm-up activities and pair work to help students get to know each other. In addition, a ‘class group chat’ was suggested (by Student 2) to help them communicate outside
the class. Furthermore, some suggested having ‘[face-to-face] classes’ (Student 10), which was completely impossible with Qatar’s closure of schools due to Covid-19. Nevertheless, these findings reflect what others, such as Mann and Henneberry (2014) and Stodel et al. (2006), have reported about students preferring face-to-face learning over the online learning mode.

6.1.3 Online or web-based communication as a medium for social interaction

| Student recommendations: | Our students advocated creating asynchronous classes and setting up panel discussion boards and hybrid classes to address internet connection unreliability and issues related to screen fatigue, which obstructed social interaction through online, web-based communication.

Participants, especially those not staying at the Education City/QF dorm, where internet coverage is provided, and who could have been in their home countries under a Cov- id-19 lockdown and travel ban, complained of having ‘Wi-Fi issues’ (Student 7), which caused some of them ‘to be less engaged or absent’ (Student 9) for some classes. To address that, they suggested having ‘asynchronous classes’ and ‘board discussions’ (Student 7) in which they could take part at their convenience. Most of our participants did not perceive online learning very favourably. One (Student 3) said ‘the online mode of instruction proved to be a serious barrier to social interaction’ and suggested having face-to-face classes whenever possible. Students suggested various reasons for the problem. First, they claimed that this mode of learning ‘did not provide time for informal communication’… for example, ‘coffee with professor/class events’ (Student 4). As Culpepper (2015) suggested, they also highlighted physical issues due to attending numerous online classes, such as screen ‘fatigue, headache, back pain, loss of sense of time, and [feeling] lazy and tired’ (Student 8). Some suggested that instructors could invite their students to stand up and stretch during the class. Others complained about poor sound quality on Zoom and suggested using other digital platforms such as Discord. They also suggested having animated backgrounds to break the boredom and monotony of online classes.

6.2 Open communication

6.2.1 Feeling comfortable talking/conversing through the online medium

| Student recommendations: | Our participating students recommended that Arabic instructors conduct more dialogues and closed and open pairs, and train students in raising digital hands and writing their questions and comments in the ‘chat box’ and discussing their comments orally, to enable shy students to talk in online classes.

It was claimed that ‘it is difficult to converse online as opposed to being in-person’ (Student 3), for which participants again gave many reasons. First, they found it difficult to talk to peers and instructors they had never met in person; some suggested raising digital hands to get an opportunity to talk. They also recommended instructors conduct as many dialogues and open and closed pairs as possible, and engage students in dialogue practice, providing them equal opportunities for taking turns and expressing themselves. In addition, they suggested that shy students could write their questions in the ‘chat box’, and the instructor could then encourage them to say them out loud, enabling them to discuss their questions with peers and get peer feedback before the instructor’s feedback. This is supported by Robinson and Hullinger’s (2008) claim about the significance of students’ working in pairs for developing collaborative community in online courses. Our participants also claimed that students, especially shy ones, would keep their microphones muted during open discussions, and recommended that instructors encourage them all to speak freely, tolerate mistakes, and engage them with their peers, which would increase their engagement in the online class (Bolliger & Halupa, 2012). Some participants explained that ‘being online … is something [we are] not used to’ (Student 12). They suggested more time, practice and technology training to master features such as digital hand raising, putting questions in the chat box, and controlling their microphones.

6.2.2 Feeling comfortable participating/interacting in course discussions

| Student recommendations: | Our participants proposed that instructors should be supportive and motivating, and ensure that students got to know each other well and were trained in using digital tools such as e-textbooks to help them overcome the anxiety of making mistakes and working with peers for the first time, which could limit their participation in online classes.

Participants claimed that working in pairs or groups in breakout rooms before they had had a chance to get to know each other well was an obstacle to participation. They recommended that their Arabic instructors build a supportive, comfortable, anxiety-free online learning environment, conduct whole-class discussions, and ensure
students feel comfortable working in pairs and groups before they are put in break-out rooms. Another challenge for some students was not using paper-based textbooks and needing to follow dialogues in the e-textbook; they suggested that instructors should moderate these discussions to ensure that students in peer discussions. Students suggested that the challenge was the unequal amounts of time allowed for each student in peer discussions. Students commented that ‘the professor can be scary’ and ‘lose comfort and confidence’. Our participants explained that this kind of class environment held them back from asking ‘stupid questions’ (Student 8) or made them afraid of being ridiculed by their instructors. They pointed out that Arabic (as a Heritage/Foreign Language learning course) is not core content, and students found it difficult to participate without making mistakes, especially when they did not have the Arabic language competency to practise; they suggested that the instructor should allow all questions and encourage students to ‘speak up even if they are wrong’ (Student 3) and to ‘clear their doubts’ (Student 8). However, unlike most of the other participants, Student 6 (who might be shy in a face-to-face context) believed ‘being online made it easier to ask questions’. Participants also recommended that instructors give students the choice whether to participate freely, and not put them on the spot by calling on them.

6.3 Group cohesion

6.3.1 Feeling comfortable disagreeing with other course participants while maintaining a sense of trust in them

Student recommendations: Participating students recommended activating peer correction and feedback; providing equal space and time for each student in peer discussions; and setting clear discussion rules to overcome the lack of peer-to-peer correction and feedback, which can make it difficult to disagree with other classmates while maintaining a sense of trust in them.

The major challenge they described here was a lack of peer correction and peer feedback practice, especially when students do not know each other very well and the instructor’s feedback and correction leave no room for peer feedback. Emphasising the value of peer correction, Student 11 commented that ‘providing [peer] feedback and correction … allows [students] to get better and improve’. A related challenge was the unequal amounts of time allowed for each student in peer discussions. Students suggested that the instructor should moderate these discussions to ensure that ‘both sides speak equally’ (Student 7). They also emphasised that Arabic instructors should set clear peer discussion rules and clear participation rubrics to ensure that ideas were discussed, not personalities, and that mutual respect and trust were maintained. For example (Student 11) proposed that ‘the instructor… [should build] an environment where everyone respects each other’s opinion’. While most of the students thought the online discussion environment made it harder for them to communicate, express and defend their opinions and disagree with coursemates, Student 6 – who might have been a shy person – thought otherwise, saying: ‘Being online made it easier to politely disagree.’

6.3.2 Feeling comfortable that your point of view is acknowledged by classmates

Student recommendations: Our participants suggested more peer-to-peer informal chat in Target Language, and that instructors should train students in how to check they understand their classmates’ opinions correctly.

A major challenge described here was the students’ lack of linguistic competency to check the meaning of their peers’ points of view. This was clearer among AFL learners than their Arabic Heritage counterparts, probably because the latter would have the linguistic ability to correctly understand and acknowledge their classmates’ viewpoints due to their wealth of language in both its forms – MSA and dialect – which they have built up through their added exposure and usage, especially of the dialect. In contrast, their non-native counterparts lacked such ability and confidence. Students also described the non-native AFL learners’ fear of talking and making mistakes, especially in front of their native Arabic Heritage counterparts. The same challenge was highlighted in the literature by Cleveland-Innes et al. (2007). Our participants suggested that instructors could help students to practise phrases such as ‘Is … what you meant?’ (Student 7), as part of their Arabic classroom language in order to be able to acknowledge their classmates’ viewpoints. Another challenge our participants mentioned was that AFL or Arabic Heritage was not a core content course; therefore, they – especially the AFL learners – lacked the linguistic competency to express agreement/disagreement in it. Instead, they preferred ‘any disagreements to be settled by asking the professor’ (Student 4) because they perceived him/her as more linguistically able to do so than themselves. As explained above, both AFL learners and AHLs at GU-Q were studying elective course tracks of Arabic. Unlike core courses, such as politics, government or history studied in English, students on Arabic course tracks did not have the linguistic competency that would enable them to
engage fully in discussions or debates in Arabic.

7. Summary and implications

Among the most valuable insights we gained from conducting this small-scale study was that our AFL learners and AHLs had experienced multiple challenges relating to their engagement in online learning, which had added to their lack of mental health and wellbeing under Covid-19. This study aimed to offer them a space to propose solutions to these challenges and contribute to the international body of literature on this topic. We have distilled some of their most productive suggestions above.

Although we designed our small-scale study along the lines of the CoI framework and its social presence element to investigate our AFL learners’ and AHLs’ social engagement in GU-Q Arabic online courses during a specific period of time, the key findings of this study illustrate experiences that will resonate with those of other students in other higher education institutions in the Middle East.

The most surprising aspect of our findings was that not all of our students were as competent in using online digital learning tools as we had mistakenly assumed they would be, and that they had not been provided with sufficient opportunity to engage online socially. Furthermore, these MSA learners had no better place to learn and practise their MSA version of Arabic than in their Arabic online course, due to the diaglossic situation in the Arab world, where MSA is used only in formal situations and literature, while multiple dialects are used in daily life situations. These two reasons contributed to decreasing their social engagement in both online and offline contexts.

As discussed above, our study identifies key challenges to the social engagement of AFL learners and AHLs and proposes a set of solutions. These challenges and solutions add sophistication to our understanding of the components of the social presence element of the CoI framework.

7.1 Affective expression

Under ‘affective expression’ our participants proposed, in keeping with the literature, that creating a welcoming environment, working in small, cooperative groups applying task-based and engaging activities, using both synchronous and asynchronous learning modes, and considering time zone differences would all enable them and their peers to develop a sense of belonging in the online course. To form distinct impressions of colleagues, our participants suggested turning their cameras on during the class and that instructors conduct more warm-up speaking activities, put them in pairs, and help students form chat groups. Krishan et al. (2020) and Conrad (2015) highlighted the positive impact of these social prompts on student engagement in online courses. To make online and web-based communication a favourable medium for social interaction, our students also suggested running discussions, asynchronous classes and regular physical activities that would enable them to overcome screen fatigue.

7.2 Open communication

To enable themselves and their peers to feel comfortable talking/conversing during their Arabic online classes, our students recommended that Arabic instructors put them in pairs and enable them to practice dialogues, and train students, especially shy ones, to raise digital hands when they needed to ask questions. Woods & Bliss (2016) also highlighted the importance of instructors training their students in using new digital technologies in their classes. To maximise their own and their peers’ interaction in online Arabic courses, our participants recommended their instructors encourage practising the TL and allowing mistakes. They also urged their instructors to build a supportive, motivating learning environment. Our study adds to the existing literature by sharing the challenges and solutions that our AFL learners and AHLS perceive as regards building open communication in online learning courses.

7.3 Group cohesion

In order to create and maintain group cohesion where students can comfortably disagree with each other while maintaining their sense of mutual trust, our participants proposed that their Arabic instructors promote peer correction and feedback and ensure students’ equality as regards peer discussion. Nippard (2005) highlighted the instructor’s role in building an anxiety-free online learning environment for promoting student engagement. Our students also recommended that they and their peers create informal chat rooms to practise the TL, and that their instructors train them in how to use classroom language to acknowledge each other’s viewpoints.

8. Recommendations

In light of the above, we make the following recommendations for AFL, AH instructors and stakeholders in higher education institutions:

• Educational institutions should take screen fatigue
into account and provide sufficient training and break times to enable students and instructors to maintain their mental wellbeing during online courses throughout the semester.

• Arabic instructors are advised to combine synchronous and asynchronous learning modes to provide a variety of learning platforms for all students wherever they are and whenever they want. This would fix many challenges, such as internet connection availability, screen fatigue, and the difference in time zones.

• In order to maximise students’ peer feedback and correction, we recommend instructors develop and share a feedback rubric with their AFL learners and AHLs as part of their course outline. We also recommend that instructors teach ‘classroom language’, especially for AFL learners, and language functions such as ‘agreeing and disagreeing’ for Heritage students.

• We recommend that Arabic instructors get trained, and train their students, in using digital tools/applications such as Flipgrid, collaborative tools in Google Workspace for Education, Quizlet and Adobe Spark Video, as well as e-textbooks.

• Additionally, we propose that Arabic instructors encourage their AFL learners and AHLs to create informal social media groups (for example, on WhatsApp and Facebook) to practise freely among themselves what they are learning in their online Arabic classes.

• Finally, we wish we could have presented these findings along with the challenges our students faced and the solutions they proposed as regards their social engagement in the online Arabic courses within the other two dimensions of the CoI framework (cognitive and teaching presences). We hope to do so in a forthcoming publication.

Although the above findings are not meant to be generalizable, we believe that our fellow instructors of AFL and AH as well as their Higher Educational Institutions may find them useful.

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Faculty learning communities: Supporting the development of online educators

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Abstract

The Covid-19 pandemic prompted a rapid transition to distance education internationally. Higher education institutions have since been challenged to adapt and support faculty needs for online teaching practices and pedagogical approaches that differ from face-to-face teaching. One approach to consider is the fostering of faculty learning communities, peer-led communities with faculty members of varied status or experience, generally selected by a facilitator or programme coordinator. Faculty learning communities have been found to provide effective environments for faculty development initiatives through members’ collective encouragement, support and collaboration in the development of teaching practices. This article examines a university in the United Arab Emirates that looked at fostering faculty learning communities to deliver training and support in learning design and teaching pedagogy to improve online teaching practices. Findings suggest that faculty learning communities thrive when experienced members facilitate learning through shared goals alongside collective input, participation and collaboration in the community. Given the current pertinence of this topic, more research is needed to better understand if learning communities have long-term impact to promote effective planning and development of online teaching practices in distance education.
1. Introduction

Governments around the world took rapid, high-stakes actions in response to the global Covid-19 pandemic. The United Arab Emirates (UAE) was no exception, and precautions were taken across the seven Emirates that affected all sectors. In the education sector, policies were drafted and disseminated with the goal of protecting students and institutional staff while also aiming for the continuation of education, albeit delivered differently (MOE, 2020; UNESCO, 2020).

The UAE Ministry of Education (MoE) referred to the fully online mandated approach as distance learning (MOE, 2020). However, due to the rapid, unplanned nature of the transition; the experience of faculty and students during this period could potentially cast a negative light on the concept of distance or online learning, therefore, in view of this, the author refers to the continuation of education provision in this period as Emergency Distance Learning (EDL), to differentiate from that of thoughtfully designed, purposefully created distance and online education (Hodges et al. 2020).

While distance education in the form of online learning is not a new pedagogy in general, the speed of transition resulted in a lack of opportunity for Higher Education Institutes (HEIs) and their educators to adapt their teaching practices for effective online delivery, to consider the engagement of learners and alignment to the strengths of the modality, arguably not providing an optimal learning experience for students (Hodges et al. 2020).

This article provides a framework for well-designed learning experiences, reverting to the concept of the Community of Inquiry (COI) for guidance before looking at how faculty learning communities (FLCs) can support faculty change and adoption of COI in online teaching practice, for the continuation of distance learning. As this transition of teaching practice requires a change in human mindset and behaviour, Kurt Lewin’s change management model has been used in this study to analyse how a facilitated, multidisciplinary FLC can support the advancement of effective online teaching practices in HEIs.

2. Literature Review

2.1 Designing engaging learning experiences

Community of Inquiry (COI) is a constructivist concept of education, which as Garrison and Arbaugh (2007) explained, predicts a new era of distance learning and consists of three intersecting key elements, namely Cognitive Presence (CP), Teaching Presence (TP) and Social Presence (SP), which ensure an engaging educational experience (see Figure 1).

![Figure 1. Community of Inquiry framework (Garrison & Arbaugh, 2007)](image)

2.2 Cognitive presence—COI

Literature indicates that, as in traditional face-to-face settings, educators perform crucial facilitation for higher-order learning activities and attainment of educational goals. Following an assessment of online learning experiences with 2,314 online learners from 32 US college campuses, Shea (2006) found that the crucial pedagogical practices such as active learning, scaffolding and modelling can help reduce the cognitive distance between the learner and learning material. Shea (2006) found that specifically, online scaffolding enables learners to articulate their views and experiences, consider alternative views expressed by classmates and instructors and ‘integrate new ideas into existing cognitive structures’. These results have been corroborated by Shea and Bidjerano (2009), who undertook exploratory research with a sample group of 2,159 virtual learners to assess students’ engagement within online educational classes. Shea and Bidjerano (2009) found that 70% of the variation in students’ levels of CP could be attributed to “instructors’” skills in fostering TP and their own abilities to establish a sense of SP.

Yang & Durrington (2010) hold the view that educators’ abilities in the distance education space are crucial to the effectiveness of online learning not only because they can motivate students to learn but also because they provide an experience through which students are able to critically
reflect upon their own learning experiences. Cleveland-Innes (2019) explains that online learning is underwritten by a participatory relationship between the student and the educator in which the two co-construct the ideas, meanings and practices of learning.

2.3 Teaching presence—COI

Studies conducted by Keller & Suzuki (2004) and Yengin, Karahoca, Karahoca & Yucel (2010) reported that there can be a sense of isolation associated with distance and online modes of learning; however, more deliberate presence from the educator can help to mitigate this.

Jiang, Parent and Eastmond (2006) investigated adult students’ progress in a competency-based online graduate programme and measured their performance in various dimensions of learning opportunities. Jiang et al. (2006) found that students’ interaction with their online instructor was the most important factor in facilitating learning because it enhanced their engagement with course materials. Similar results were reported by Garrison and Arbaugh (2007), who noted that the role of the teacher is a highly significant element not only of student engagement but also of perceived learning. Furthermore, in recent studies by Aharony & Bar-Ilan (2016) and Fidalgo, Thormann, Kulyk & Lencastre (2020) it was reported that teacher presence is an essential factor motivating students to learn, especially in asynchronous learning environments where courses can be accessed and completed at a time convenient to the learner.

2.4 Social presence—COI

Driscoll, Jicha, Hunt, Tichavsky and Thompson (2012) conducted exploratory research with two samples of undergraduate students studying at a North Carolina university. The first sample group was taught through traditional face-to-face methods, while the second group was provided with an online module. Both groups were taught by the same instructor and evaluated through completion of the same materials. Students from both groups completed self-report questionnaires to assess their engagement in the respective courses. Driscoll et al. (2012) found that while there was no significant distinction in levels of satisfaction between the two teaching methods, students in the online learning group reported lower attainment than the traditional face-to-face group. According to Driscoll et al. (2012), this outcome is because online learning must be developed to meet the unique requirements of distance learning to be effective.

In a study conducted by Garrison (2017) it was found to enable purposeful communication and interaction between the student and the educator, online education must also aim to integrate individual students into a broader network of learner-centred experiences, such as by providing active learning, group-based learning and reflection activities.

2.5 Faculty supporting faculty to enhance online teaching practice

In order to align to the concepts of COI and achieve cognitive, teaching and social presence it is important for faculty members to develop online teaching practices. Considering the design and delivery of appropriate learning content and experiences for the online modality is a key element. The rapid transition to the delivery of distance education prompted a need for rapid adaptation of faculty and infrastructure in order to provide engaging distance education. In the HEI context in which institutions can be resistant or complex to change, Communities of Practice (CoPs) can emerge quickly and informally to enable faculty and experts to share experiences and collaborate to improve understanding and overcome challenges surrounding a topic of shared interest (Wenger, 2011). One flexible and deliberate approach to a CoP in an HEI context is a faculty learning community (FLC), a peer-led community with faculty members of varied status or experience, generally selected by a facilitator or programme coordinator. Previous research has found that FLCs can provide effective environments for faculty development initiatives through members’ collective encouragement, support and collaboration in the development of teaching practices (Cox, 2002). A challenge to the development of FLCs is effective facilitation because the role should be carried out by a strong communicator with experience in the scholarship of teaching and learning. The facilitator does not necessarily have to be a subject matter expert but should have skills in fostering community (Cox, Richlin & Essington, 2013). Palmer (1999) found that encouraging social interaction was also a key ingredient to engaging faculty in supportive training. Research has outlined the extent to which FLCs promote a shared group identity and contribute to community development. Smith and Smith (1993) found that successful training programmes consist of collaboration, faculty ownership and empowerment in an on-going programme of delivery.

2.5.1 FLCs to achieve COI?

While research has shown that student engagement in online learning can be achieved through the adoption of frameworks such as COI, to guide the design, organisation and delivery of course content (Aghostinho, Bennet, Lockyer, Jones, & Harper, 2019)
Studies conducted by Clarke, Hyde & Drennan (2016) and Newbold, Seifert, Doherty, Scheffler & Ray (2017) found that many educators in HEIs may struggle to adapt to designing and delivering in online learning environments because they have been socialised into context-specific roles as content experts, meaning that pedagogy and learning design might not be a consideration in their teaching practice.

However, in the current situation of mandated distance education, educators are required to adapt quickly. As such, training, and support are needed in order to become effective educators in the online space. Therefore, this article’s investigation of FLCs as a mechanism for developing faculty in the design and delivery of online teaching may offer crucial insights for organisations in a similar position. The Kurt Lewin change management model will be discussed in the next section as the theoretical framework for this article.

3. The Kurt Lewin change model as theoretical framework

While the concept of change management is familiar in business settings, it may not be common practice in HEIs. In fact, the education sector has been slow to reform in response to the needs of modern society (Freire, 2018; Robinson, 2010). The current transition of education provision, however, is driven by an external disruptor that mandates change at an unprecedented pace. Thus, this study will utilise the Kurt Lewin change management model from 1974 (MindTools, n. d.), which consists of three stages essential to impactful change, to explore thoughtful change management. The three stages are 1) Unfreezing, 2) Changing and 3) Refreezing (Figure 2).

Lewin’s model (unfreezing, changing and refreezing) is an established model for implementing change.

Stage 1: Unfreezing (planning)

This initial stage involves the acceptance that change is needed by challenging patterns of behaviour and/or perceived models of success. This can be achieved by showing why the existing approaches are not working and planning alternatives.

Stage 2: Changing (Action)

Following the uncertainty created in the unfreeze stage, the changing or action stage is where people start to take
ownership of the change and offer approaches and solutions to implement the transition.

**Stage 3: Refreezing (Result)**

Once changes are happening or being implemented, the refreezing stage ensures that the momentum continues by offering some new consistent elements that were a product of the change approach.

The implementation of change involves the current state of an organisation to be disrupted, reformed and reset into a desired state. Critics of this model highlight the over-simplification of organisations and absence of a user-centred approach. If the persons involved in the process of change are neglected, change initiatives may result in failure (Kanter, Jick, & Stein, 1992).

Lewin’s solution was to highlight the significance of preparing people for the change (unfreezing) and reinforcing the necessity of change (freezing) after the implementation of the initiative; this process ensures that people first understand the necessity of change and therefore, reduce the chances of returning to old routines (MindTools, n. d.).

4. **Problem Statement**

This article explores how FLCs can support the development of online teaching practices at a University in the UAE by responding to the following questions.

- RQ1.1—Which factors impact the design of an online training programme?
- RQ1.2—How can FLCs support delivery of an online training programme?

5. **Methodology**

5.1 **Case focus: the institution**

This study focuses on the experiences of an Australian university campus in Dubai, UAE. The University of Wollongong in Dubai (UOWD) is one of the oldest private institutions in the Emirates.

5.2 **Aims of the FLC**

The FLC aims to establish a community of faculty that will enable sustained change across the institution. Change would be enacted by members of the FLC who have expertise in certain areas and shared amongst members. The responsibility for change emerges with faculty members rotating to drive the community, offering their own experiences and identifying areas they would like to lead.

5.3 **Initiating the FLC**

As the initiating member of the FLC, I have experience in designing curriculum and learning experiences in face-to-face, online and blended modalities and therefore, due to the needs identified by the move to EDL, I acted to provide guidance in the form of training in designing distance education. FLCs thrive when experts in the group facilitate learning around shared goals and there is collective input, participation and collaboration from the members regardless of status or experience in the community (Cowan, 2012).

5.4 **Member selection**

Invitations to participate in the learning community was sent to all faculty members across the four departments of business, engineering, humanities, and the University College. In total, 51 participants signed up to be part of the FLC. Their roles consisting of teaching undergraduate and postgraduate learners and with professional backgrounds of business, engineering, nursing, education and language teaching.

5.5 **FLC: First contact**

The starting point for the community was to participation in a structured, facilitated training programme that offered opportunities for continued collaboration, support and training across all faculty areas.

The FLC members self-selected which of the 4 week-long offerings they would attend. The training programme was delivered via the organisation’s video conferencing tool and lasted for 1 week, offering one 90-minute session per day for 5 days (see Figure 3). The programme was repeated 4 times to give all FLC members the opportunity to attend.

5.6 **Data collection: Member feedback**

Faculty feedback is essential for improving future workshops and identifying future themes. Therefore, data was collected in the form of qualitative feedback derived from an evaluation video that participants created following the final training session. The 3-2-1 evaluation asked participants to access a video tool that they had been introduced to and answer the following questions:

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5.7 Data analysis

I employed an inductive approach to thematic analysis of the data to avoid any potential bias and to offer flexibility in the outcome. I manually coded responses to the training evaluation videos, identifying similarities, differences and relationships between components of the data before combining codes to form themes (O’Leary, 2017).

6. Findings and discussion

The use of literature supports the outcomes of the online training programme learning design. In addition, the data of the 3-2-1 evaluations was analysed by comparing and determining similarities and differences in order to identify patterns. The findings were analysed according to each of the following themes that have emerged from the data:

- Learning design
- Learning and teaching approaches
- Teaching tools/technology

The following findings and discussion are structured and reported in relation to the theoretical framework of the Kurt Lewin’s Change Management Model in order to address the identified research problem of how FLCs might support the development of online teaching practices.

In relation to RQ 1.1, factors that impact the design of an online training programme, stages 1 (planning) and 2 (action), below highlight the need for planning and implementation of an online education programme that supports the FLC by fostering community and providing training in the development of online teaching practice.

In relation to RQ 1.2, how FLCs can support delivery of an online training programme, is addressed in stage 3 with the collection and analysis of feedback to inform future training programmes.

6.1 Stage 1: Unfreezing (planning)

As part of Lewin’s ‘unfreezing’ stage, planning was represented by the learning design of the ‘designing distance education’ training programme which was informed by the COI framework to incorporate best practices in online learning design and teaching.

Each session was assigned a theme and related practice skill, allowing participants to gain or reaffirm theoretical aspects of learning and teaching while offering practical experience in using tools or approaches that could be transferred back into their teaching practice. Each session built upon the content of the previous session and gave opportunity for reflection, facilitator instruction, collaboration and active learning opportunities. Sessions were designed in a way to reduce teacher-led delivery and increase learner-centred content as the participants progressed.
Table 1. Responses to the question: What 3 things did you learn from the training? (reflection)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Participant’s response summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning design</td>
<td>The participants indicated that they had learnt about aspects of learning design, such as chunking content, learning sequencing and cognitive load.</td>
</tr>
<tr>
<td>Learning and teaching approaches</td>
<td>The predominant area represented in this theme was the content and activities related to developing educator presence. This was a substantial area of the training that covered the COI and how videos can be quickly created and used to provide deliberate teacher presence in online environments. The specific instructional strategy of the jigsaw method was something that came up regularly as something newly learnt.</td>
</tr>
<tr>
<td>Teaching tools / technology</td>
<td>The training introduced three collaboration tools that could be integrated with the existing learning management system: FlipGrip, Padlet and Google Jamboard. A large proportion of the respondents named these tools as something they had learnt.</td>
</tr>
</tbody>
</table>

Table 2. Responses to the question: What 2 things did you already know? (linking to prior knowledge)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Participant’s response summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning design</td>
<td>Respondents were equally divided between having previous familiarity and being introduced to the areas of chunking content, learning sequencing and cognitive load</td>
</tr>
<tr>
<td>Learning and teaching approaches</td>
<td>Respondents identified that the active learning techniques covered were already known or reinforced during the training in addition to material coverage, assessment for learning and feedback techniques.</td>
</tr>
<tr>
<td>Teaching tools / technology</td>
<td>Very few respondents reported that they had prior knowledge or experience with the technological tools that were covered.</td>
</tr>
</tbody>
</table>

Table 3. Responses to the question: Name 1 thing that you are still unsure about. (needs analysis for further training)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Participant’s response summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning design</td>
<td>There were few responses under this question across all themes. ‘Academic integrity of online exams’ was mentioned along with ‘strategies for online only or face-to-face’. I believe further exploration is required to uncover the meaning of the last statement.</td>
</tr>
<tr>
<td>Learning and teaching approaches</td>
<td>Some individual responses highlighted ‘Design thinking’, ‘Group assessment design’, ‘active learning strategies’ and ‘interactivity for scientific courses’.</td>
</tr>
<tr>
<td>Teaching tools / technology</td>
<td>This theme produced the most responses, with participants requesting more training on the functions of video conferencing tools, such as breakout rooms, creation of digital learning objects and ‘new technologies to be used in class’.</td>
</tr>
</tbody>
</table>

6.2 Stage 2: Changing (action)

As stated, the COI framework underpinned the learning design of the training programme. Its use to develop effective online learning was also communicated in the content of the sessions throughout the programme and can therefore be associated with communicating the need for considerations to be made when designing online education, such as CP, SP and TP.

In addition, as previously noted, Cox et al. (2013) stated that the development of an FLC requires effective facilitation from a member or coordinator with experience in the scholarship of teaching and learning. I was the primary
facilitator of programme having over a decade of experience in the area of teaching and learning, learning design and digital education.

6.3 Stage 3: Refreezing (results)

To identify any areas of the training that may need to be readdressed, reinforced or built upon, a quick activity to evaluate the programme was delivered to the participants: a 3-2-1 evaluation.

The 3-2-1 evaluation asked participants to access a video tool that they had been introduced to and answer the following: What are three things that they had learnt from the training (reflection), two things that they already knew (linking to prior knowledge) and one thing they were still unsure about (needs analysis for further training). Twenty-four of the 51 participants provided a response. The responses provide qualitative data that was analysed and the following themes identified: learning design, learning and teaching approaches and teaching tools/technology. In Tables 1, 2 and 3 each question is presented with a table of the theme and a summary of the participant responses in relation to the identified theme.

One aim of the training was to balance the theory and practical aspects of learning design, reviewing the evaluation responses shows a general consensus that participants are more focussed on training related to technology and tools, feeling that they already had a good understanding of and experience with learning design and learning and teaching approaches. Evidence of this in teaching practice, however, is something that could be explored by the FLC through peer observation and coaching.

7. Conclusion

Due to the international Covid-19 pandemic, teaching practices have been impacted and change has been required across the education sector. This study aimed to examine how FLCs can support the development of online teaching practice, particularly around appropriate learning design for the delivery of distance learning. Lewin’s change management model has provided a useful lens to view and structure the findings of this study, the unfreezing stage came from an external source—the global Covid-19 pandemic and subsequent mandate from the UAE MoE that led to the provision of EDL. Due to the unprecedented nature of the semester, there was an acceptance of change to preserve the student experience, which paved the way for planning of a training programme which aimed to impact teaching by modelling best practice in its design and delivery to provide faculty participants with knowledge, techniques and tools that could be immediately transferred into their own practice to support change beyond the workshops. The changing or action phase of the model was the development of an FLC, and subsequent delivery of the training programme, and the refreezing stage gathered results from the training to assess if changes were impactful and transferable to future practice.

In order to achieve sustained change, FLC members will need to take ownership and continue to drive the community by using their own experiences and identifying areas that they would like to lead. This study provides insights into leveraging a FLC to train faculty on appropriate learning design for the delivery of distance education using the COI framework. The outcomes may be of interest to policymakers looking to create and implement new policies to improve online education, or faculty developers, faculty members and educators in general looking to develop online teaching practice.

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Examining the use of Kahoot to support digital game-based formative assessments in UAE higher education

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Abstract
Attempts to sustain economic growth and diversification within the Middle East have seen governments invested in various educational initiatives. In alignment with this ethos, the United Arab Emirates offers citizens, free education in government-funded higher educational institutes, and bursaries linked to grade point average scores. It is believed that incentivised learning environments provide a powerful motivation to stimulate academic excellence in summative assessments — linked to grade point average scores. An unfortunate outcome of these environments may, however, be that non-grade point reliant tasks are not prioritised by learners. Thus, identifying pedagogical tools which engage student agency towards such tasks, is of obvious interest to educators working within these settings.

One such tool which may engage student agency towards formative assessments, is the digital game-based learning platform Kahoot. Kahoot is known to have permeated many educational domains due to its claimed ability to transform classrooms into fun, competitive environments, where students are engaged and motivated to learn. There is, however, a sparsity of literature evidencing the effects that contextual or demographic influences may have upon this and other digital game-based learning tools effectiveness. As such, an explanatory case-based study situated in the United Arab Emirates incentivised learning environment, was undertaken to evaluate female
students’ perceptions of Kahoot, as a formative assessment tool. To achieve this Mwanza’s eight-step model for translating data into activity theory components was utilised to develop semi-structured interview questions (Mwanza, 2002). These questions permitted analyses of the social, the individual, and socio-economic structures influencing user engagement with this technology.

Upon introduction of Kahoot as a formative assessment tool, into the incentivised learning context of the UAE, students described contradictions between classroom and institutional rules, community expectations and the divisions of labour. The transformed classroom environments resultant from resolution of these contradictions produced, greater learner collaboration, superior knowledge retention, reduced test anxiety, and increased levels of student satisfaction. In contrast with other contexts, this study evidenced that digital game-based learning did not predominantly influence student’s motivation to study outside of the classroom for formative assessments. Instead, conventional paper-based assessments provided the greater impetus to engage in out of class learning. This finding may have resulted from the socio-economic and socio-cultural perceptions of the students within this specific learning context. This study, therefore, urges researchers and educators to undertake shifts in their consciousness to acknowledge socio-cultural and intersubjective factors, which may impact upon the effectiveness of digital game-based learning as a formative assessment tool. This is in recognition of this study’s findings that such technologies, may be heavily dependent upon both contextual and demographic influences of those utilising them.

1. Introduction

Over the last few decades, governments within the Middle East have recognised the necessity to invest in educational initiatives to nurture long term economic growth, development and diversification (Kamel, 2014). In response to these needs, national objectives and strategies have been developed to sustain the foundations of life-long learning and improve the quality of educational initiatives being delivered (Kamel, 2014). Indeed, the development of human capital through national strategies, in this manner, Kamel (2014) highlights the best way to ensure a country’s ‘effective and sustainable socioeconomical development’ (p. 104).

It is, therefore, unsurprising that one of the United Arab Emirates (UAE) strategic visions, is to stimulate the creation of an educated and trained nation (Federal Government UAE, 2010). To help achieve this reality, the UAE provides UAE nationals with free education in government-funded higher educational institutes (Embassy of the UAE, 2021), and bursaries linked to student’s grade point average (GPA) scores (FCHS, 2021a). Indeed, it also offers similar privileges to non-national students who are offered tuition scholarships dependent upon GPA attained (FCHS, 2021b; KU, 2021).

Such incentivising of learning environment via the provision of these external rewards is believed to be a powerful tool, capable of encouraging student motivation in achieving learning outcomes; particularly when test results contribute to incentives offered (Cameron, 2001; Putwain, Langdale, Woods & Nicholson, 2011; Sunder & Kitsantas, 2004). However, it should also be highlighted that GPA scores are conversely used by policymakers to ensure conformity to expected standards. As such, GPA scores are not only used to encourage achievement, but also to dismiss poorly performing students, or withholding permission to graduate until specified cumulative GPA scores are achieved (Quinn & Peters, 2017).

In attempts to help aid the learning process (Fry, Ketteridge, & Marshall, 2015) and encourage GPA attainment, formative assessments are often incorporated into teaching and learning strategies within the UAE. This is in recognition of formative assessments ability to enlighten students as to what they must do to achieve target competencies, measured in summative assessments (Lyon, Oláh, & Wylie, 2019). Successful formative assessment strategies, therefore, provide learners with effective feedback on their progress, to enable appropriate remedial actions to be implemented (Black & Williams, 2009; Fry et al., 2015).

Given the power of formative assessments to positively influence student learning, many supporters of these practices have described the need to encourage student agency towards formative assessment processes (Andrade, Wang, Du, & Akawi, 2009; Lyon et al., 2019). Student agency is believed to be evidenced when students review their progress and reflect upon how it was achieved (Lyon et al., 2019). To undertake such actions, however, requires motivated and engaged learners, as student motivation is key to eliciting meaningful learning (Biggs & Tang, 2011) when undertaking formative assessments.

Although it is recognised that incentivising learning may encourage student agency towards summative assessments, it is unlikely to impact upon student’s desire to engage with non-GPA reliant tasks, such as formative quizzes. Indeed, this is supported by claims that the greatest effects of
motivation and student agency are produced when incentives are linked to performance (Cameron, 2001; Putwain et al., 2011; Sundre & Kitsantas, 2004). Therefore, identifying pedagogical tools which may assist educators in motivating students’ engagement in non-GPA reliant tasks is of utmost importance to educators within these environments.

One way in which student engagement and motivation can be enhanced within the classroom is through the utilisation of digital game-based learning tools (Iwamoto et al., 2017; Morillas-Bario, Munoz-Organero, & Sanchez-Soriano, 2016). One such digital game-based learning platform is Kahoot (Kahoot, 2018). This student response system combines role-play within a game show format, alongside audio-visual aids to enhance the gaming experience (Wang, 2015). This tool has become immensely popular as it’s claimed to transform classrooms into competitive, fun environments, which stimulate learners motivation and ambition to succeed in answering questions correctly (Bicen & Kocakoyun, 2018; Ismail & Mohammad, 2017; Licorish, Owen, Daniel, & George, 2018).

Recently Kahoot has been recommended for use as an effective formative assessment tool within medical education (Bicen & Kocakoyun, 2018; Iwamoto et al., 2017; Licorish et al., 2018). However, some have cautioned that this tool may not be suited for use in all educational contexts, and may not be received favourably by all student populations (Ismail & Mohammad, 2017). Indeed, a common limitation of research conducted within the field of digital game-based learning and technology-enhanced learning is the failure to recognise that user engagement may be influenced by socio-cultural and intersubjective factors as opposed to the technology alone.

Yet despite the lack of empirical evidence to support digital game-based learning in all contexts and environments, increasing availability and affordability of interactive technologies has resulted in the widespread adoption of gaming within learning environments (Ebner & Holzinger, 2007; Papastergiou, 2009). As such, digital game-based learning has today succeeded in permeated all levels of education and has thus been utilised to achieve a wide range of educational purposes (Hainey et al., 2016; Ismail & Mohammad, 2017; Licorish et al., 2018).

In light of Kahoot’s ability to motivate students to engage in formative assessments, this tool was selected for use within an all-female paramedic undergraduate programme within the UAE. This approach it was hoped would provide the impetus to motivate student engagement towards non-GPA reliant tasks. It was, however, recognised that certain students within certain contexts may find this tool more effective than others; as such, this study was undertaken to explore socio-cultural and intersubjective factors which may impact upon the student’s receptiveness of digital game-based learning as a formative assessment tool. Thus, this study asked the following research questions:

How does the introduction of Kahoot, as a game-based tool for formative assessment, impact upon the learning practices of female undergraduate students in an incentivised educational system in the United Arab Emirates?

2. Literature review

2.1 E-assessments

It has been claimed that formative assessment which utilises electronic tools (e-assessments) can improve and support learners to a greater extent than more traditional paper-based assessments (Bahati, Fors, Hansen, Nouri, & Mukama, 2019; Pachler, Daly, Mor, & Mellar, 2010). This is because they can provide immediate grading of student performance, and therefore expedite feedback mechanisms to rapidly address misconceptions (Shieh & Cefai, 2017). It is, therefore, conceivable to expect that e-assessments would unanimously be welcomed by all students.

However, in a recent study conducted within the UAE, students taking e-assessments for both summative and formative assessments expressed increased levels of test anxiety with this testing modality. These students thus claimed to prefer more traditional paper-based modalities, due to concerns for internet connectivity and/or system failures (Patronis, Ishtaiwa-Dweikat, Al Awad, & Aburezeq, 2019).

Incentivising learning environments have in general, been claimed to trigger feelings of fear (Castro et al., 2018), which may be accentuated if learners are reliant upon financial incentives, or fearful of non-compliance policies. Fear of failure manifesting as test anxiety can present as either cognitive or emotional concerns aligned with physiological symptoms (Schwarzer, 1984). However, there is conflicting opinion as to whether increased test anxiety enhances student performance (Sundre & Kitsantas, 2004) or whether it lowers GPAs attainment (Duty, Christian, Loftus, & Zappi, 2016).

The middle ground in this debate is that the relationship between test anxiety and performance is not linear, and as such whilst some level of anxiety may facilitate performance; excessive anxiety may negatively impact upon performance...
(Keeley, Zayac, & Correia, 2008). Thus, given the possibility of test anxiety impacting adversely upon students, educators need to identify ways of reducing excessive anxiety in learners—especially in contexts where the implications of failure are so high.

2.2 Kahoot

The digital game-based learning platform Kahoot has been identified as an effective formative assessments tool, capable of motivating students to learn, assisting in knowledge acquisition, and stimulating students impetus to study (Bicen & Kocakoyun, 2018; Ismail & Mohammad, 2017). It is postulated that this is achieved by Kahoot's propensity to influence classrooms dynamics through the development of a competitive, interactive and collaborative classroom that motivates engagement with lecture content thereby fostering deep learning practices (Bicen & Kocakoyun, 2018; Licorish et al., 2018). Indeed, Kahoot has been credited with enabling students to speak out in class, providing a means to seek feedback immediately upon performance, and more recently attributed with permitting engagement of large numbers of students at the same time (Nkhoma, Nkhoma, Thomas, & Tu, 2018; Parra-Santos, Molina-Jorda, Casanova-Pastor, & Maiorano-Lauria, 2018; Wang & Tahir, 2020). These are indeed important attributes, as many researchers advocate that student engagement and motivation are key to eliciting meaningful learning (Biggs & Tang, 2011; Meguid & Kahalil, 2017).

Whilst a recent systematic review of the effects of using Kahoot, also revealed that Kahoot helped alleviate test anxiety in some learners; it also conversely highlighted that in some contexts Kahoot had little to no effect on student performance, classroom dynamics, attitudes or students' levels of anxiety (Wang & Tahir, 2020). Indeed, Ismail & Mohammed (2017) claimed that female learners expressed less appreciation of this digital game-based learning platform than their male counterparts and theorised that the content being assessed through this platform also impacted upon its utility.

It is, therefore, apparent that this tool may not have the same efficacy within all environmental setting. Indeed, the literature has not yet considered wider socio-cultural influences which may impact upon Kahoot’s utility in any depth, particularly within incentivised learning environments of the UAE. As such, the remainder of this paper shall consider activity theory as a theoretical structure to evaluate these factors within the UAE setting. It shall, therefore; describe the study performed, and the students’ perceptions of Kahoot, to deliver formative assessments within the UAE.

3. Theoretical framework

3.1 Activity theory

Activity theory posits that human activities are collective and sustained efforts regulated by objects and mediated by artefacts (Bligh & Flood, 2015). Human subjects form activities because they wish to work on objects; and develop or appropriate artefacts, to help them undertake that work. An example might be working on the object of a GPA score using the tools of formative assessment.

It is important, however, to recognise that activity theorists believe that activity should be conceptualised as ‘the relationship between the subjective and the objective within a single reality’ (Bligh & Flood, 2017, p.129). Understanding the dynamic development of relationships within an activity system is, believed to permit illumination of social, individual, socio-economic structures, and human agency within the activity system (Engeström, 1999).

The model of activity system we will use in this work is a unit of analysis for activity. In other words, human activity is understood as divided up into different activity systems, with different activity systems interacting across the world of human practice. An activity system, in this model, consists of seven interlocking components: subject, artefacts, rules, community, division of labour, outcomes (see Figure 1).

Table 1 depicts how these components are conceptualised and gives some idea of our initial thoughts on how these might be instantiated in the context of the study. Those initial ideas, of course, would be changed once we started the analysis of our data.

Upon analysing the interactions of these components
with one another, over time; internal problems and tensions known as contradictions are expressed externally, and revealed to those analysing these systems (Engeström, 1987; Murphy & Rodriguez-Manzanares, 2013). As those involved in the activity strive to resolve contradictions, activity systems experience transformation, change and innovation.

Table 1. Components of the activity system within the context of this study

<table>
<thead>
<tr>
<th>Component</th>
<th>How conceptualised</th>
<th>Initial idea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>Those engaged in the activity.</td>
<td>Students</td>
</tr>
<tr>
<td>Object</td>
<td>The motive held by the subject to complete the activity</td>
<td>To sustain GPA</td>
</tr>
<tr>
<td>Outcome</td>
<td>The why of engaging in the activity</td>
<td>Successfully complete the undergraduate program</td>
</tr>
<tr>
<td>Artefact</td>
<td>Used to mediate the subject-object interaction.</td>
<td>Formative assessment exercises</td>
</tr>
<tr>
<td>Rules</td>
<td>Explicit and implicit regulation of the activity.</td>
<td>GPA maintenance and other college policies within the context setting</td>
</tr>
<tr>
<td>Community</td>
<td>The wider social group to which the subjects belong.</td>
<td>Peers, teachers, family, and friends.</td>
</tr>
<tr>
<td>Division of Labour</td>
<td>How the activity is distributed and carried out within the system.</td>
<td>Students work in groups.</td>
</tr>
</tbody>
</table>

(Engeström, 1999, 2001; Morch, Nygard, & Ludvigsen, 2010). As such, contradictions may be viewed as dynamic forces of change (Hardman, 2005), and thus identifying them permits the forces driving transformation within the activity system to be revealed.

Engeström (1987) classifies activity system contradictions as primary, secondary, tertiary and quaternary, and defines these contradiction as follows:

- Primary contradictions — occur within elements of the activity, often pertaining to value-system conflicts such as the use to the subject compared to exchange value within some field/market.
- Secondary contradictions — those which exist between the components of the system.
- Tertiary contradictions — occur when there are tensions between existing forms of the activity with remnants of an old system.
- Quaternary contradictions — manifested when an activity system interacts with a neighbouring activity system.

3.2 Activity theory and educational research

Within the educational setting, contradictions have been used to describe relationships between students, teachers, as well as instruments, rules and collaborations (Barab, Barnett, Yamagata-Lynch, Squire, & Keating, 2002). Indeed Hardman, (2005) utilised activity theory to understand how the introduction of technology into deprived schools meditated shifts in the object of the classroom's activity. Others have utilised activity theory to contribute to the understanding of how a presentation tool may mediate teaching and learning practices within a specific university setting (Bligh & Coyle, 2013), thus highlighting how the artefact (presentation tool) produced disturbances to both classroom and assessment rules and norms.

Similar to these studies, activity theory within this paper is utilised as a lens to focus attention upon contradictions within the digital game-based formative assessment activity system. Hence, the principles and concepts of activity theory shall form the background of this paper’s data collection and shall be utilised to analyse and describe the complex relationships between students, educational practices and the community where the study was set. Thus, this study shall seek to identify how these context-specific factors impacted students’ perception of the utility of Kahoot as a formative assessment tool compared to conventional paper-based assessments.

4. Research design

4.1 Research site

This research was conducted within an all-female paramedic undergraduate program within the UAE, which utilised formative assessment strategies within a paramedic-pharmacology module. Digital game-based learning was introduced into this module by the teacher/researcher as a means of motivating and engaging students in formative
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assessments and in the recognition of the potential test anxiety that learners may experience in response to the increased test burden of non-GPA reliant tasks.

4.2 Case study design

A single qualitative case-based study was implemented in recognition of its ability to explaining, describing, illustrating and enlightening (Yin, 2009) practices and settings. Mwanza’s (2002) eight-step model to translate activity theory into its components was utilised as a coding frame to structure this case study upon.

Table 2. Mwanza’s (2002) eight-step model

<table>
<thead>
<tr>
<th>Activity Theory component</th>
<th>Mwanza’s Eight Step Translation Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activity</td>
<td>What sort of activity am I interested in?</td>
</tr>
<tr>
<td>Object/Outcome</td>
<td>Why is this activity taking place?</td>
</tr>
<tr>
<td>Subjects</td>
<td>Who is involved in carrying out this activity?</td>
</tr>
<tr>
<td>Artefacts/Tools</td>
<td>By what means are the subjects carrying out this activity?</td>
</tr>
<tr>
<td>Rules and Regulations</td>
<td>Are there any cultural norms, rules and regulations governing the performance of the activity?</td>
</tr>
<tr>
<td>Division of Labour</td>
<td>Who is responsible for what when carrying out this activity and how are the roles organized?</td>
</tr>
<tr>
<td>Community</td>
<td>What is the environment in which the activity is carried out?</td>
</tr>
</tbody>
</table>

4.3 Participants

Fourteen female Paramedic students in the second year of their bachelor’s degree (18-21 years) were invited to participate in this study. All fourteen students had undertaken both Kahoot and conventional paper-based formative assessments as part of the module’s formative assessment strategy. A total of ten students agreed to take part in this study.

4.4 Methods

4.4.1 Formative assessment: Kahoot

During a Kahoot assessment, students individually logged onto the Kahoot website and entered a game pin into their mobile devices, which linked them to a previously prepared formative assessments quiz (Figure 2). Students individually answered the questions displayed on the classroom’s projector, by selecting the answer on their devices (Figure 3).

Figure 2. Entering the game pin into Kahoot

Depending upon how accurately and quickly the student answered, a score was provided and subsequently displayed on a leader board after each question. Podium positions at the end of the quiz identify the highest scorers (Figure 4), these students were awarded a small prize at the end of the assessment. Kahoot formative assessments were all multi-choice format and students were afforded 30 seconds only to answer each question.

On alternate weeks, students were provided with a paper-based assessment, which had a mixture of multiple choice and short answer questions. One minute was afforded to complete each of the paper-based formative assessment questions. Feedback was provided on performance the following week, during which time students would review transcripts and discussed answers collectively.
The course had both paper-based and Kahoot formative assessments delivered throughout the module’s duration; there were a total of two paper-based quizzes which were conducted on weeks 2 and week 4, and four Kahoot quizzes were conducted weeks 3, 5, 6 and 9.

4.4.2 Interviews

Upon completion of all the formative assessments, semi-structured interviews were conducted designed to elicit the students’ perceptions of the utility of the game-based platform as a formative assessment tool in comparison to conventional paper-based formative assessment. Activity theory was applied as a theoretical framework to this study, to organise the researcher’s thinking and make the complexities of the activity visible (Lingard et al., 2012). As such, Mwanza’s (2002) eight-step model to translate activity theory components into research questions was utilised to help frame interview questions, to illicit the students’ perceptions of Kahoot, and to determine the impact of this digital game-based learning tool upon their learning.
It was hoped by using this model contextual factors promoting or impacting upon formative assessments delivery via Kahoot would be illuminated. In highlighting these findings through the deployment of an activity theory lens, it was theorised that this would permit discussions beyond the confines of this study, thereby, enabling a generalised understanding of the impact of incentivised learning spaces within the UAE.

Interviews conducted varied between 15 to 32 minutes in length, dependent upon the level of engagement of the interviewee with the questions. These interviews were recorded on a digital recorder, anonymised and downloaded onto a password-protected computer.

Ethics approval was granted from both Lancaster University and the UAE university where the students were enrolled. All research participants provided informed written consent for their data to use within this study.

4.4.3 Data analysis

Utilising activity system elements as a coding frame, semi-structured interviews were undertaken in tandem with sampling. Transcripts were produced after each interview and were coded by constant comparison. General themes which were uncovered were then assigned to the components parts of the activity system. The software NVivo 12 was utilised to aid in the organisation of emerging themes.

Data coded from the interviews was correlated against the corresponded components of the activity system (Engeström, 1987), and analysed for the presence of contradictions.

4.5 Limitations

The possible limitations of this study to acknowledge are that results obtained may not be generalised to all context, as participants were only recruited from one higher education facility within the UAE and utilised only female students. Students enrolled in this study were able to self-select as to whether they would participate, which may have therefore introduced selection bias (List & Rasul, 2011).

The test format between the two formative assessment methods varied, as did the frequency of the exposure to the different interventions. However, the purpose of this qualitative study was not to provide absolute truths about the world in general, but rather provide a view that may help in understanding how technology may remediate context-specific activity system. Thereby providing a snapshot of debate surrounding the utilisation of digital game-based learning as a formative assessment tool in a higher educational facility.

Given the time constraints of this project, the data collected was not able to be triangulated with other sources.

5. Findings

5.1 Identifying activity system components

The first part of the following analysis describes the elements of the activity system. The subsequent section describes the dynamics of that system—i.e., the contradictions within the system.

5.11 Object

The object of the activity as expressed by students was to sustain their GPAs and successfully pass the course to graduate. The educator's/researcher's motive for introducing digital game-based learning into the classroom was to motivate students' engagement in meaningful learning for formative assessment. However, this motivation was not expressed by the students in the interviews.

5.12 Subject

When discussing their wider educational experiences, students voiced their responses in largely personal terms. Students described studying in personal silos outside and inside the classroom for paper-based formative assessments. As such, their participation in this activity started out as a personal endeavour in which they intended to study at home, or within the institute's facilities, but always on their own.

'I think it was an ego thing that made me want to do well. I'm so competitive…so that's why I studied.'

Conversely, although students still studied for Kahoot's alone outside the classroom, they associated themselves as a collective entity, learning together when undertaking Kahoot quizzes in class. This was evident in their descriptions of how they would work together to find the correct answers during Kahoot assessments, and how they would collectively provide feedback to one another (and through their teacher) immediately after their responses were graded by Kahoot.

'I want to hear other people discussing the question [after a Kahoot]. I want to hear you talk about it so that I can relate things to what I have studied. But when I'm...'
alone looking at my paper [quiz], I am just like, Oh, this is my mistake and then I would forget about it.’

The students’ responses, therefore, highlighted that the present activity system was associated with a more collective subject formation than evident in paper-based assessment and, indeed, in ‘normal’ academic endeavours in the course.

5.1.3 Artefact

All students (n=10) unanimously stated that using Kahoot as a formative assessment made the sessions feel ‘Less stressful’ and ‘fun.’ That seems important because the actual object of activity (discussed above) is high-stakes assessment and therefore typically regarded as stressful. It is evident from these documented perceptions that the student’s level of test anxiety diminished when this method of formative assessment was applied compared to paper-based formative assessment.

‘Kahoot felt like a game, it wasn’t like an exam, and we were challenging each other, so it was okay if I didn’t do well….. ‘

One aspect of the Kahoot artefact that attracted some comment from students was how ‘scores’ were displayed. Whilst all students did not mind scores being displayed during formative assessment gaming, many students (n=8) did not want their peers to see their paper-based results nor discuss questions they had not answered correctly. Students explained these concerns in terms of its impact upon their self-esteem, and how others may perceive their individual performance.

‘Often in the paper base, I don’t want to share my answer if I got it wrong or didn’t understand the question, I will feel ashamed. So, I stay quiet, most of us stay quiet.’

5.1.4 Rules

Through the incentivising of learning, students within this activity system were influenced by both institutional and national policies designed to maintain and regulate academic achievements. These socio-economic structures continued to influence how students acted within the activity system and encouraged the students to focus on academic achievement.

‘I know I will get a grade […] and feel it will play an important role in my future, and then my GPA will be affected by my marks, and that’s not funny, it’s not good – that’s… it’s so stressful for us’

The level of test anxiety may have also been related to the reduced enforcement of these more typical class and assessment rules, which continued to exert influence alongside the ‘gaming’ as oppose to the ‘assessment’ atmosphere which Kahoot created.

However, students did suggest that the classroom rules were changed as a result of the introduction of Kahoot, through the creation of a more collaborative ethos. This transformation in the Kahoot classroom was conveyed by one student who stated:

‘When we do a paper-based quiz…..because we’re not able to help each other talk to each other about the answers, it makes us feel helpless; as opposed to the Kahoot where as soon as I answer the question, I turned to my friend and asked her, What did you put?!’

Students explained that the introduction of Kahoot as a formative assessment tool meant that feedback sessions became more interactive and collaborative in nature. This Collaborative environment mediated by Kahoot resulted in learners viewing themselves as less subordinate to their teacher as they not only wanted to hear what the teacher had to offer but wanted to question each other and their own ideas to construct knowledge together. Hence, oppose to passive acceptance of right and wrong, students described debates and disagreements which aided in the construction of their knowledge.

When asked how students felt about this change to normal formative assessment rules, students explained this had resulted in them becoming more engaged with the feedback process and had provided an impetus to engage in deeper learning practices within the classroom.

‘With the paper-based, we just take the answer, and want to know if it’s right or wrong, but for the Kahoot …..when somebody puts the wrong answer, they will shout out No, Why? All of us like the challenge, and we really want to know why we answered incorrectly.’

On the other hand, students realised that this remediation of the assessment process meant that they could easily cheat (by conferring with neighbouring students) during the formative assessments if they wished. This behaviour of collusion during tests is at odds with the norms of assessment, strategies within the institute (and educational norms at large).

Yet such cheating was not always viewed negatively. Students could each easily recall incidents of cheating/collu-
sion that they had experienced or witnessed during a Kahoot assessment and one student recalled incidents of how this had aided in the learning and recall of information.

'A girl helped me with a question in the Kahoot, then something related to it came up in the exam. I remembered it because I thought, “Oh, my friend told me this before in the Kahoot, yeah, I remember now.” So cheating was definitely beneficial for me.'

Students, on the whole, voiced their appreciation of collaborative learning practices and highlighted how this practice was at odds with the normal paper-based formative assessment they had experienced.

5.1.5 Community

Students described their work in the activity in ways that made reference to a variety of other stakeholders, including peers on the course, other students not enrolled on the course, teachers, family members such as parents, etc. It was apparent that wider socio-economic structures governed the student's intersubjective and socio-cultural environment.

Many of the comments described the decision to choose the course. One student expressed these concerns by describing the socio-cultural environment she was immersed within.

‘Other girls had already said this course was very hard, which made us worry about it...we were like oh my, it's going to be so hard, so we were so stressed out.... all of them said this was the hardest course and that we would get bad marks.'

Indeed, one student having discussed her future plans with the wider student community to enrol in the module described her concerns around maintaining her GPA.

‘They said don’t do the course, your GPA will fall, and you will get kicked out of the college.... then, I imagined myself as a housewife, not doing anything...staying at home with children. So, yeah, I was worried.’

It was clear that students viewed their work in the course as relevant against a wider backdrop of expectations and reactions, which significantly influenced their working in the course.

5.1.6 Division of labour

One core influence of the introduction of Kahoot was an increased focus on studying in class and less focus on studying outside class time for the assessment. The intended outcome of the activity system from the teacher’s perspective was that the introduction of Kahoot would give students an increased impetus to study for formative assessments. Yet predominantly students (n=7) identified that paper-based assessments had a greater influence on their desire to study outside of the classroom (Figure 5).

The reason was that a fear of failure within paper-based assessments appeared to have been the prior motivation for students to study for the assessment out of class. There was a strong meaning for the students that a paper-based formative assessment was more serious, perhaps due to it being more commonly associated with summative GPA dependent tasks, (and as such, stipends and bursaries).

Whilst the population size in this study was only small (n=10) these findings demonstrate that 70% of students did not invest as much time into the preparation of formative assessments conducted by Kahoot compared to paper-based assessments. Students also described how they believed others might judge their failures on paper-based formative assessments more severely.

‘...when I did the paper-based (if I got a bad mark) my classmates would say “Oh, you got a very low mark” “Oh, my, oh my, you should do better in the next quiz” “Oh, my, you will fail” “Oh my, you should repeat the course.”.... So, it felt it was something so serious when we did paper-based.'

Nonetheless, Students claimed that despite the lack of out of class preparations for these tests, they felt they learnt and retained more knowledge from Kahoot formative assessments than they did from more conventional paper-based assessments. Hence, although their motivation to study for Kahoot formative assessments was not increased, they believed their attainment was improved by the use of Kahoot. This was a surprising finding, given the competitive nature of these environments, it was anticipated that the tool would have stimulated greater engagement in preparation for these assessments.

Students also expressed that they unexpectedly ‘enjoyed’ the digital game-based learning and said that as a result, they had a more positive view of the course and their teacher than they had anticipated before the module had begun.
5.2 Contradictions revealed

5.2.1 Tensions around the extent of work

Students worked much more intensely in the classroom to uncover meaning and understanding from the formative assessments provided through Kahoot. However, students described how they felt they did not need to invest as much time in studying for Kahoot assessments outside of the classroom, as this type of assessment was not viewed as serious to them. Hence, there are primary contradictions evident with the amount of work deemed desirable within different contexts when Kahoot was introduced: outside of the classroom—less work, inside the classroom—more collective and engaged learning.

5.2.2 Challenging the rules of assessment

Another primary contradiction within the Kahoot mediated activity system was evident in the students’ discussions surrounding cheating and collusion. Within the Kahoot environment, these behaviours were not frowned upon, as they made interactions more fun and aided in the gaming atmosphere. Students described how these unusual behaviours helped motivate greater understanding from feedback mechanisms and assisted in recall during summative assessments.

5.2.3 Enjoyment and achievement

Clearly, the aims of the teacher to shift the perception of the object of activity were unsuccessful despite the deployment of Kahoot quizzes. The cultural values surrounding the course are very deeply embedded and students persisted in seeing the object as being about sustaining GPAs.

It is, however, noteworthy, that students identified a range of other issues when discussing outcomes from the course, such as how they enjoyed the course more, participating differently, although they did continue to value GPAs above everything else.

This secondary contradiction between the object and the outcome of the activity appears to be unresolved at the time of writing, but it is interesting that students seemed to enjoy the course partly because they felt they were able to do something fun without damaging their GPAs.

5.2.4 Class community and individual outcome

Pressure expressed by the students to individually maintain their GPA scores, and to individually conform to community expectations surrounding GPA attainment, appears at odds with their collective behaviour within the Kahoot formative assessments. This is an interesting secondary contradiction, as despite both the individuals and the community working to reinforce the individualistic long-standing object of GPA maintenance, when students engaged in Kahoot assessments they did so as a collective group.

Thus, the subjects and rules, on the one hand, are in contradiction with community and object, on the other hand. This is an unresolved contradiction that shows introducing the Kahoot tool and its game-based elements exacerbates existing tensions about individual attainment.

5.2.5 The continuing shadow of anxiety

Students expressed considerable anxiety surrounding assessments and the implications they may have upon their GPAs. It was difficult to prevent students from comparing the Kahoot assessment to the normal paper-based assessments. Likewise, it was difficult for students to accept that paper-based formative assessments were not something to be overly anxious about. It is theorised that students struggled to assimilate to the new formative assessment activity system in which they felt less anxious because this way of working was at odds with their cultural norms associated with assessments. These actions, therefore, evidenced tertiary contradictions within the system between the rules and community.
6. Discussion

In broad terms, activity theory has been used to describe relationships between students, teachers, instruments and rules of collaboration (Barab et al., 2002) to gain insight into the dynamics of an activity. It is the intent of the following section to detail these relationships as perceived by subjects involved in digital game-based learning for formative assessments. As such, the components of the activity system at odds with one another as a result of the introduction of the digital game-based formative assessments shall be considered within the subsequent discussion. This discussion shall, therefore, illuminate female UAE undergraduates’ perceptions of Kahoot, and describe its impact upon their learning when used as a formative assessment tool through the transformation of system contradictions.

6.1 Outcome

The primary outcome of undertaking the course was expressed by the students as the maintenance of GPA and the successful passing of the course, an unexpected outcome expressed as a result of digital game-based learning formative assessments was increased student satisfaction (of both their teacher and the course content). This secondary contradiction whilst not the main focus of this study is important to note, as future users of Kahoot may choose to do so in light of the double-natured contradiction which may be produced in an activity system by this technology.

Indeed, the semi-structured interviews evidenced that students and teacher had different intended outcomes of this activity. Whilst the teacher wanted to construct deeper understanding and learning through engagement in formative assessments. Students were transfixed on GPA maintenance and successful course completion before commencing the course. Through the use of Kahoot, the students’ actions were, therefore, rearticulated towards the teacher’s goals of the activity system – as they engaged in meaningful learning which also translated to their goals to sustain their GPAs. Blunden (2010) summarises such rearticulation of motives and goals within an activity system as being ‘dependent upon the representation of the activity through mediation of social relations.’ (p.178)

It is, therefore, evident that Kahoot mediated a transformation in formative assessment engagement by learners, which aligned with the teacher’s motives for delivering the assessment tasks in this way. As such, the utilisation of Kahoot to shift pedagogical practices within the classroom to suit both teacher and students’ needs, may be worthy of future investigation.

6.2 Artefacts

Previous studies have revealed that Kahoot is a fun form of digital game-based learning which was capable of serving as both a formative assessment tool and revision aid (Ismail & Mohammad, 2017; Wang & Tahir, 2020). In the context...
where this study was conducted students supported these claims and also highlighted that when this method of formative assessment was employed compared to paper-based formative assessments, the mood in the classroom was lightened; and transformed into an enjoyable fun learning experience.

6.3 Rules

6.3.1 Rules I

Interestingly this study also highlights that in utilising Kahoot as a formative assessment tool, the rules and classroom norms were transformed—as classroom formalities associated with tests were removed and replaced with a collaborative environment where feedback upon performance was actively sought and debated. This is an important consideration when planning formative assessments, which ensure student agency is maximised (Lyon et al., 2019).

Students explained their lack of engagement in feedback when not engaged within Kahoot formative assessments was routed in concerns for their self-esteem and others’ perceptions of their performance. Their descriptions of discomfort and embarrassment attached to the possible failure of an assessment are symptoms associated with test anxiety (Minor & Gold, 1985). These findings highlight secondary unresolved contradictions within the system between the subjects and the rules, and the community. Conversely, the introduction of Kahoot transformed the formative assessment process by resolving/remediating the fears of the learners—through the gamification of formative assessment. Hence, within these environments, students felt safer and no longer felt the need to protect their anonymity or feel embarrassed about gaps in their knowledge.

6.3.2 Rules II

Whilst cheating would not normally be welcomed within an assessment process, it is postulated from the review of the transcribed data, that these actions were beneficial in aiding memory retention. These memorable moments of breaking classroom rules and cheating may have mediated recall of facts and knowledge gained during these incidents, and thereby created more superior knowledge retention. These actions of collaboration, cheating and collusion within the Kahoot tool-mediated formative assessment, therefore, produced primary contradiction with the activity system between the rules and the subjects. These contradictions, thus, lead to Kahoot transforming the teaching environment to an interactive and collaborative domain, compared to the silent, and solitary paper-based formative assessment environment.

6.4 Community

Socio-economic structures which governed the student’s intersubjective and socio-cultural environment were evident from the student’s descriptions of how the wider community viewed the need to comply with these societal norms in which the activity system was grounded. This was evident in one interview where the student expressed concern for the possible implications of her failure to maintain her GPA might mean she may need to adjust her career goal from paramedic to housewife. This narrative evidenced the degree to which the student felt uncomfortable about the possibility of her failure, and the heightened degree of tension and worry this was causing her. It also evidences the wider socio-cultural environment which was perpetuating these concerns in the students and details the economic reality of non-compliance with local and national policies to the students within this study.

6.5 Division of labour

Collaborative practices are highly sought graduate attributes, and as such there have been calls within the literature to recruit existing technologies that may re-mediate areas of student learning to enable collaborative learning to occur (Crook, 2010). It would appear from this case study that Kahoot as a formative assessment tool may be able to offer such a remediating solution, as students claimed that whilst their out of class learning practices on the whole were reduced by the introduction of Kahoot, their learning practices within the classroom were transformed.

Students perceived that whilst the introduction of Kahoot did not mean they needed to devote more time to out of class study for these formative assessments, as they were less serious; they recognised that the introduction of Kahoot meant that feedback sessions became more interactive and collaborative in nature. Thus, students were utilising technology to negotiate meaning through the social world of collaboration, rather than only within the individual’s minds (Stahl, Koschmann, & Suthers, 2006).

This Collaborative environment mediated by Kahoot resulted in learners viewing themselves as less subordinate to their teacher as they not only wanted to hear what the teacher had to offer but also wanted to question each other and their own ideas to construct knowledge together. As such a new form of activity was mediated via the introduction of Kahoot as a formative assessment tool.
Given contextual and demographic differences between this study and others, it is not possible to refute claims as to the utility of Kahoot to motivate out-of-class study (Bicen & Kocakoyun, 2018). It is, however, a clear example of the importance of considering the socio-cultural, economic and intersubjectivity influences; and also highlights the importance of comparing technological tools directly against pre-existing conventional ones (Hainey et al., 2016).

### 7. Conclusion

Similar to earlier research, this study revealed that digital game-based learning conducted with Kahoot produced a fun, and collaborative atmosphere, which helped alleviate symptoms of test anxiety. However, unlike previous studies, through the application of an activity theory lens, this study permitted the influence that contextual factors had upon the utility of this technology to be evaluated. In doing so, this study revealed the presence of contradictions between the rules and norms of assessment policies, resultant from introducing Kahoot into the incentivised learning environment. These primary contradictions within the system produced by the utilisation of Kahoot, permitted collaboration and collusion to be fostered within learners who would usually work alone under formal exam conditions. Students identified that this was beneficial to their knowledge construction as it created memorable moments that aided knowledge recall, and made them feel less anxious.

Students did not, however, identify that digital game-based formative assessment, conducted with Kahoot stimulated greater out of class learning. Indeed, students identified that within their incentivised mediated context, that standard paper-based formative assessments motivated out of class engagement more. This was borne out of fear for this type of assessment being psychologically linked to GPA attainment, and fears that the wider student community would view their failure. Such findings may be limited to the incentivised learning context of the UAE, as within this environment poor performance in formally structured assessments can have both implications upon academic progression and financial bursaries received.

Hence, the findings in this study may be different from other context results due to the socio-economic and inter-subjectivity of this system, which incentivises learning within the UAE context. However, the results of the activity system examined indicated that through collaboration and collusion Kahoot may permit superior knowledge retention, without increased investment in out-of-class studying. Further studies are required to identify whether such practices have tangible effects on students performance. However, this study evidenced that digital game-based learning with Kahoot did produce marked effects on student satisfaction rates expressed towards both the teacher and the subject content. Formative assessment conducted by digital game-based learning may, therefore, offer an attractive solution to educators and curriculum designers who wish to engage students in formative assessments; and also, positively affect perceived levels of student’s satisfaction.

### References


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Benefits and barriers of online speaking practice: A case study in the United Arab Emirates

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Abstract
This exploratory case study reports on the design and implementation of online speaking practice in the context of IELTS preparation courses in a private, non-profit national university in the UAE. Providing speaking practice can be challenging in classes with high student numbers and limited class time. Therefore, online speaking assignments were designed to fulfill students’ need for more speaking practice. Students were required to prepare, then record their responses to IELTS type questions and share them with classmates. Two device agnostic voice recording apps were used: VoiceThread and SoundCloud. The study examines students’ perceptions on the assignments through a mixed-method approach to identify benefits and barriers of such assignments. Findings show an improvement in how students perceive their speaking skills, fluency, self-confidence, collaboration, peer learning, and autonomy through error detection and self-correction. The barriers, however, can be categorised within three main areas: technical, motivational, and cultural values. Although the findings are relevant to this particular context, the study contributes to the research on the use of asynchronous voice recording web tools in the Middle East, particularly with reference to cultural values as a barrier. It also provides a practical example of the use of such tools.
1. Introduction

When teaching foreign or second language speaking skills, particularly to students with low-level proficiency, the instructor’s role becomes quite complex due to the complexity of the act of speaking as a socio-linguistic process (Dakowska, 2005). On one hand, instructors try to adopt a communicative language teaching approach to enrich classroom interaction (Aleksandrzak, 2011) and make their classes more student-centred. On the other hand, students’ low-level language proficiency requires increased language input and instructor interference and guidance. Language input is sometimes increased to overcome the shortcomings of the communicative approach which focuses on communication more than on the socio-linguistic aspects of speaking (Aleksandrzak, 2011). Typically, speaking skills lesson plans are divided into three phases: target language input, structured output, and finally communicative output which should indicate an increased degree of communicative competence. These phases align with the three stages of developing speaking skills: awareness, appropriation and autonomy (Thornbury, 2007). Here, in particular, lies the challenge in the context of this study, where the number of students is usually high and lesson time is limited. Students do not get enough practice inside the classroom. However, this challenge is not particular to the context of this study, Aleksandrzak (2011) duly points to “the inadequate frequency of speaking opportunities in the classroom” (p. 38). Technological affordances can lend a helping hand in that regard, more so due to the general trend of students being engaged and motivated to combat this frustration (Dreimane, 2019; Yang and Chen, 2007) and engaged (Dunn and Kennedy, 2019) by technology integration in their lessons.

To fulfil students’ need for more speaking practice, three online speaking assignments (OSAs) were designed as an integral part of the IELTS Listening and Speaking (L&S) course. These assignments involved using two asynchronous, voice recording and sharing Web tools, namely, VoiceThread and SoundCloud. Students were required to respond orally to IELTS related prompts, record their response, and share it online with classmates. Later, students’ perceptions of these assignments were investigated.

The significance of this study is that it contributes to the body of research on effective use of asynchronous voice recording web tools in the Middle East, particularly with reference to cultural values as a barrier. It also provides a practical example of the use of such tools and examines students’ perceptions of OSAs. A mixed-method approach was used to explore possible benefits and challenges.

Students were invited to answer a questionnaire, followed by semi-structured interviews. Data from both sources were analysed and the results indicated positive findings, possible challenges and some areas that need further research.

1.1 Context of the study

The context of this study is a semi-private university in the United Arab Emirates. The Intensive English Program (IEP), offered by the University’s English Language Centre, provides four levels of language proficiency programs for first-year students who need to achieve a score of band 5 in the IELTS (or TOEFL 500) as a prerequisite to entering certain colleges where the medium of instruction is English.

The university has two campuses, men’s and women’s. This study was conducted in the women’s campus in two sections of level 3, IELTS L&S course where the author was the instructor of the course. Each section was allocated five hours a week with a range of 20 to 30 students per class. The population of students was mainly Emirati with a blend of other Arab students, aged 18 to 26. Students’ progress was continuously assessed by their course work, assignments, and exams. The grades they get, however, are not part of their university GPA. Therefore, grades are not considered a motivator for students.

As noted by AlOkaily (2015, 2019), students are usually under pressure to get the required IELTS score. Feelings of impatience and frustration are quite common among students taking IEP courses. Therefore, instructors need to keep students engaged and motivated to combat this frustration. Devising creative assignments, especially involving technology, can help in that regard and is encouraged by University policy.

It is relevant here to describe the cultural background of this context as it is relevant to some findings of the study. The university states on its official website that its core values are deeply rooted in Arab and Islamic culture. Language, religion and tradition have been identified as forming cultural norms and lecturers have described the context as conservative (AlOkaily, 2016). Consequently, students’ attitudes, as well as lecturers lesson planning are affected by considerations of the prevailing cultural norms of the university.

1.2 Problem statement

Speaking skills in IELTS preparation classes in this context are allocated around 2.5 hours a week. The high number of students in class (38 students) is challenging...
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When designing speaking exercises in the classroom because some students tend to dominate interaction while others opt to stay quiet. Similar problems were documented in the literature as students often feel not proficient enough in speaking due to the lack of occasions to speak (Boonkit, 2010) or the inefficiency of speaking activities in English as a second/foreign language (ESL/EFL) courses (Aleksandrzak, 2011).

One solution is for instructors to create more speaking opportunities on an online forum with audio recording capabilities so that each student gets a chance to practice. Some students in this study have occasionally expressed appreciation of how OSAs have helped them improve their speaking skills. Yet, some other students have reacted negatively to that sort of assignments and missed their submission deadlines. This prompted the investigation of students’ perceptions of OSAs in an attempt to explore the benefits and the challenges they faced while doing them.

1.3 Research questions

This study investigates students’ perceptions of the OSA by asking the following questions:

• How do students perceive online speaking opportunities offered as part of the IELTS preparation course?
• How do they perceive the effects of the designed OSAs on the development of their speaking skills?
• What are the challenges that students faced while doing their assignments?

2. Literature Review

2.1 Teaching approaches for IELTS speaking skills

There are a number of approaches to prepare students for the IELTS speaking component. IELTS preparation textbooks typically follow an approach of identifying recurrent topics and designing lesson plans around them, e.g. (Kovacs, 2011; Jackeman & McDowell, 2011; O’Connell, 2010). Alternatively, other textbooks identify question types and strategies and design lesson plans around them e.g. (Matthews & Salisbury, 2007; O’Sullivan & Thurlow, 2011; Jakeman and McDowell, 2010). Other approaches involve strategies that are custom tailored to fit particular students. Issitt (2007), for example, targeted three important areas, namely: self-confidence, critical thinking, and IELTS marking criteria to help improve IELTS band scores. Another example is a study by Stones (2013) where he describes how recording students’ speaking practice, then asking them to transcribe it can help students identify some of their own mistakes and enables the instructor to provide written feedback on the same transcript.

The approach proposed in this report is a combination of the above-mentioned approaches and will be discussed later in the procedure section.

2.2 Voice recording web tools for learning and teaching

A number of online tools that can enhance second or foreign language learning have been used and tested in a variety of teaching situations. Studies report positive results on the use of Web 2.0 tools and Computer Mediated Communication (CMC) especially ones involving voice recording. Sun (2009) cites a number of such studies that show increased motivation, engagement, achievement, learner autonomy, cooperative and collaborative learning, among other results.

Other studies have been more specific in reporting findings on the use of particular tools. The first tool is VoiceThread which is a cloud based application for sharing any type of media and allows participants to comment on that media by adding comments in a number of ways: audio (by microphone), video (by webcam), text, or media files. VoiceThread, has been quite popular with educators. Brunvand & Byrd (2011) emphasised its user-friendly interface. Delmas (2017) and Ching & Hsu (2013) used VoiceThread in graduate, online programs and both studies report increased collaborative learning and a sense of belonging to a learning community. It has also been used by undergraduate students to practice their English language speaking skills and learn presentation skills (AlOkaily, 2013, 2015), by pre-service teachers as a forum for reflection (McCormack, 2010), by business students for presentation delivery (Chan & Pallapu, 2012), by undergraduate students to facilitate collaboration on their projects (Augustsson, 2010), and as content delivery tool (Kidd, 2013). Fox (2017) reports on the use of VoiceThread to increase collaborative learning in an online educational programme for clinical nurse leaders who preferred the asynchronous voice communication over the text-based forum discussions. This is a sample of some of the research available on the use of VoiceThread in educational settings and it all points to the potential this tool has in fostering higher levels of collaboration and learner engagement. Smith & Dobson (2011) commented on its characteristic ease of use, and how it combines all aspects of language literacy, “into one seamless presentation tool” (p. 325).

Language learning is an area where voice recording has often been used to improve communicative competence.
McIntosh, Braul & Chao (2003) used it through an asynchronous voice conferencing tool, Wimba Voice Board, as part of an EAP language course. They reported that other than facilitating collaboration among learners, it indicated a deeper thought process and helped achieve communicative competence. Sun (2009) related similar findings after using Voice Blogging with language learners and Hew & Cheung (2012) also cited literature on how voice recording provides good practice to students learning a second language in “speaking, listening, and do self-diagnosis of pronunciation errors.” (p. 362)

2.3 Barriers to the use of web tools

A number of barriers that hinder the use of Web tools have been widely identified as well. In a study conducted in Oman, Al-Senaidi, Lin & Poirot (2009) classify barriers to ICT integration in teaching into two types:

- external or first-order barriers, which relate to the limited resources, lack of time, lack of technical support, and technical problem, and the internal or second-order barriers, which relate to the teachers' attitudes to ICT such as lack of confidence, resistance to change and negative attitudes, and no perception of benefits (Ertmer, 1999; Snoeyink and Ertmer, 2001).

Students were reported to have felt shy, intimidated, or embarrassed by the notion of recording and sharing their voice (Ching & Hsu, 2013; Hew & Cheung, 2012; Yaneske and Oates 2010; McIntosh, Braul & Chao, 2003; McIntosh et al 2003; Marriott & Hiscock 2002). Other studies in the UAE noted that students were more engaged but would not do any additional work, participation or contribution beyond the requirement (AlOkaily, 2016, 2013; Santos, 2013). However, AlOkaily (2016) reports that some lecturers refrain from designing assignments or activities that require students to make audio/video presentations based on the perception that it would be culturally inappropriate.

On the technical side, Smith & Dobson (2011) identified that the publishing options offered by VoiceThread do not lend itself to quick easy publishing of students' work and that a process needs to be followed to ensure collaborative work gets shared properly. Sound quality related issues and computer lag or freeze were also listed among the annoyances that went along the process (McIntosh et al. 2003). The same studies also reported that it can be time consuming due to technical problems or to the need to repeat recordings more than once before students were satisfied with the final product. Many of these findings have also emerged from the data collected for this study. Further explanation emerges from the analysis of the student interviews.

3. Methodology

This study adopted a pragmatic ontological position to knowledge claims in the form of paradigmatic pluralism (Onwuegbuzi & Leech, 2005). Therefore, both explanatory and exploratory case study design was followed to investigate students' perceptions on the use of voice recording through asynchronous Web tools. The case study draws on both quantitative and qualitative data as an approach to acquire more in-depth, holistic description (Cohen, Manion, Morrison, 2011) to complement and validate findings through explanatory sequential design (Creswell, 2009; Onwuegbuzi, 2004). This approach was adopted in an attempt to minimise researcher/instructor bias through anticipating possible influences on the students. Hence, quantitative data was collected and analysed. The analysis showed some findings and some gaps; therefore, qualitative data was collected to validate the findings and close the gaps of the quantitative data. Both methods had the same weight and are collated in the discussion section of this paper. The data gathering tools used in the study were questionnaire and semi-structured interviews. Figure 1 (Adapted from Ivankova & Stick, 2007) shows a visual model for mixed-methods sequential explanatory design procedures followed in this study.

3.1 Participants

The participants of the study were 38 female students in level 3 IELTS preparation, L&S class. All participants were from an Arab, Muslim cultural background. More than half were local Emiratis (20 students), some Saudi (10), Syrian (5), and Jordanian (3) aged 18 and 20 with two students aged 24 and 26. The number of students diminished along the course because students were allowed to exit the course at any point upon achieving an IELTS score of band 5. By the time the questionnaire was administered, the number of students had fallen to 30, of which 27 answered the questionnaire.

3.2 Design of the OSAs and teaching approach

Once again, it should be mentioned here that the author was the instructor of this course. A systematic approach was followed when teaching the speaking component of the IELTS exam (Figure 2).

First, recurrent topics were introduced by eliciting students' prior knowledge on these topics to activate schema (Carrell, 1984). Then, students were put into groups and...
each group was provided with a different set of IELTS questions. Students brainstormed for ideas and took notes. Upon completing the preparation of answers, I asked individual students to respond to the questions orally. Class time does not permit that each student gets a chance to practice the part they prepared; therefore, students were required to go to a VoiceThread presentation that was previously created for them with the set of questions that were provided to the whole class. Students were asked to find the slide that had their set of questions and respond to it orally by recording

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### Figure 1. Mixed-methods sequential explanatory design procedures (adapted from Ivankova & Stick, 2007)

<table>
<thead>
<tr>
<th>Phase</th>
<th>Procedure</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantitative Data Collection</td>
<td>• Cross-sectional online questionnaire (N= 27)</td>
<td>• Numeric data</td>
</tr>
<tr>
<td>Quantitative Data Analysis</td>
<td>• ‘Strongly agree’ and ‘Agree’ combined to indicate a positive response&lt;br&gt;• ‘Strongly disagree’ and ‘Disagree’ combined to indicate a negative response</td>
<td>• Descriptive statistics: strong indicators of benefits and some indicators of barriers.&lt;br&gt;• Need to validate results.&lt;br&gt;• Need for in-depth description</td>
</tr>
<tr>
<td>Sample Selection: Interview Protocol Development</td>
<td>• Purposive Sample (N=6)&lt;br&gt;• Developing semi-structured interview questions</td>
<td>• 6 interviews</td>
</tr>
<tr>
<td>Qualitative Data Collection</td>
<td>• Individual semi-structured interviews with 6 participants recorded on a voice recording mobile app&lt;br&gt;• translation and transcription of interviews</td>
<td>• Audio files of interview recordings&lt;br&gt;• Transcripts of interviews</td>
</tr>
<tr>
<td>Qualitative Data Collection</td>
<td>• Open-coded analysis&lt;br&gt;• ‘Identifying themes’ and detailed description</td>
<td>• Validation of results on benefits&lt;br&gt;• In-depth descriptions: more details on barriers</td>
</tr>
<tr>
<td>Integration of Quantitative and Qualitative Results</td>
<td>• Interpretation and explanation of quantitative and qualitative results</td>
<td>• Discussion&lt;br&gt;• Significance of results&lt;br&gt;• Future research</td>
</tr>
</tbody>
</table>
their voice. Students reported that they needed to record their responses many times before they were satisfied with the recording and shared it on the VoiceThread for all classmates. Knowing that there will be an audience (their classmates) made them more self-conscious and eager to perfect their response. In the process, they identified their mistakes in pronunciation and grammar and attempted to correct them by re-recording. Later, the same VoiceThread was made available for class students by adjusting the settings to allow students to see each other’s responses on each set of questions. Therefore, that particular VoiceThread became a platform for students’ different responses. In other words, it became a bank of possible responses to different exam questions and each of them got the chance to respond to questions individually.

Some students had technical difficulties accessing VoiceThread due to the type of digital device used or due to slow Internet connection. In response, students were given the option to use SoundCloud, a platform for creating and sharing audio files. SoundCloud was chosen because of its simplicity and ease of use. Students needed an introductory session on how to use SoundCloud and how to make the recordings private, i.e. not shared publicly with the world. Then, students shared their recordings with classmates by posting the links to a shared Google drive spreadsheet.

3.3 Procedure: A two-phase study

The data collection was done in two phases: quantitative and qualitative.

3.3.1 Phase 1: Quantitative method: Questionnaire design and data collection

Students were asked to respond to an online questionnaire to assess their perspectives on their experience with voice recording. They were informed about the nature and purpose of this study and signed an informed consent stating that their participation in the questionnaire was totally optional and completely anonymous, and that their voice recordings will not be used as part of this study.

The questionnaire was cross-sectional as the data was collected at one point in time (Creswell, 2003). The design process of the questionnaire followed three stages (Table 1): identifying the general purpose, identifying the subsidiary topics, and formulating specific information requirements (Cohen et al. 2011), all of which were driven from the initial research questions.

The questionnaire contained a number of statements that reflect both general and subsidiary topics based on findings from the literature review. There was a four-scale response option for each statement starting with 'strongly agree', 'agree', 'disagree', and 'strongly disagree'. The 'neither agree nor disagree' option was purposefully removed because
students did three OSA assignments; hence, they should have an informed opinion about it. Cohen et al. (2011) explain this possibility as follows:

> Choices may be ‘forced’ by omitting certain categories (e.g. ‘no opinion’, ‘undecided’, ‘don’t know’, ‘neither agree nor disagree’). If the researcher genuinely believes that respondents do, or should, have an opinion then such omissions may be justified. (p. 389)

An open-ended question was added to give students the chance to add anything that the questionnaire did not tackle. Although open ended questions are normally associated with qualitative data, this question was considered as part of the quantitative data (Singer & Couper, 2011). Oppenheim (1992) draws attention that ‘statistical tabulation’ of open-ended questions might reduce the richness of results. In this case, such loss was compensated in the qualitative phase. The questionnaire was hosted on qualtrics.com and piloted with a random sample of five students to “ensure that the categories are comprehensive, exhaustive and representative” (Cohen et al. 2011 p 384). There were no significant problems except a refinement of some sentence structures to simplify the questions. It is worth mentioning here that questions were simplified to suit students’ English language level. The link to the questionnaire, along with a cover letter to explain purpose, was emailed to the remaining 30 students of both sections. 27 of them responded. 19 of the 27 answered the open-ended question.

### Table 1. Questionnaire design

<table>
<thead>
<tr>
<th>Design Stage</th>
<th>Questionnaire Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>General purpose</td>
<td>• to obtain a detailed understanding of students’ perceptions of the OSAs</td>
</tr>
<tr>
<td>Subsidiary topics</td>
<td>• the benefits of OSAs in improving students’ speaking skills, and</td>
</tr>
<tr>
<td></td>
<td>• the challenges students faced while doing their assignments</td>
</tr>
<tr>
<td>Information require-</td>
<td>• Benefits: improved speaking through practice? collaboration? repetition? sharing?</td>
</tr>
<tr>
<td>ments</td>
<td>• Challenges: are they technical? motivational (i.e. willingness to work outside of the classroom)? cultural?</td>
</tr>
</tbody>
</table>

#### 3.3.2 Phase 2: Qualitative method: Interview design and data collection

This phase was designed to validate questionnaire findings and acquire more specific information regarding the challenges that faced students (Creswell et al, 2003). Six semi-structured interviews were conducted to probe areas that were not reflected explicitly in the questionnaire.

#### 3.3.2.1 Sample selection

The type of sample was, according to Cohen et al. (2011), a dimensional sample (p. 158) or a purposive nonrandom sample (Mackey & Gass, 2005; p. 123)

**Figure 3. Interview Sample Selection**

Since one of the main purposes of the interview was to identify the type of challenges (being technical, motivational and/or cultural), students in both classes were categorised according to these categories. The categorization was based on knowledge of students’ capabilities and tendencies. This knowledge was built gradually through daily contact with them as their instructor. Some students were categorized as more tech-savvy because they were ready to help when any technical problem occurs. Some were self-driven and highly motivated. They were categorised as such because they were the ones who did the work in class and were constantly asking for more practice and did their assignments on time. Others were more observant of Arabic, Islamic culture and traditions. This was displayed through their conduct and code of dress. Of course, there were students who were in two or all three categories. The Venn diagram (Figure 3)
shows the interviewees distribution within these three categories. As mentioned earlier, pseudonyms are used. A fourth category was where students came from. I tried to have a representative from each country. Reference to students’ countries will not be made to further protect their identity.

3.3.2.2 Interview design and protocol

The interview was designed as a set of questions with some freedom for both interviewer (author/instructor of the course) and the students to allow for exploration of students’ perceptions from a number of angles. The content was driven from the initial research questions, literature review, and the quantitative results from phase 1. The first main purpose of the interview was to explore and elaborate on the challenges students faced. In other words, why some of them delayed or resisted doing these assignments. The second main purpose was to validate the statistical evidence from phase 1 of the study regarding how the OSAs helped improve students general speaking skills and better prepare them for the speaking component of the IELTS exam. The main questions revolved around areas to be explored according to Table 2. Some sub-questions were added when students did not give enough information.

The questions were asked in both English and Arabic to ensure that meaning was not lost and the interviewees were given the option to answer in either language. Two of them answered in English and four answered in Arabic. The interviews were recorded and transcribed. To validate the interviews, interviewees were then invited to read the transcription and sign that it is a true account of the interview. All students’ names were removed and pseudonyms were used instead to protect their identity.

4. Results

4.1 Quantitative data analysis.

The results of the questionnaire gave some insights regarding the use of OSAs (Table 3). For purposes of analysis, ‘strongly agree’ and ‘agree’ were grouped together to indicate a general agreement, and the same was done with responses indicating general disagreement.

Statement 1 assessed students’ overall perception of the assignments and showed unanimous agreement that the OSAs were effective in improving their speaking skills. Statements 2 to 6 were intended to explore phases of the assignment, i.e. IELTS topic preparation, recording answers, listening to own recording, re-recording, sharing and listening to other students’ responses (in that order). Again, responses showed an almost unanimous agreement that students went through the intended assignment phases. Only one student indicated that she shared her recording without listening to it. The second phase of data collection was planned to validate them in case they were the result of any possible influence that the knowledge of the research project had on students.

Statements 7 through 10 aimed at identifying which tool (VoiceThread or SoundCloud) was more difficult to use and whether the difficulty came from using the website or the mobile app. Although the statements might seem double-barreled, asking about both delays and errors in each of the statements, the purpose behind this was to generally identify where it was easier to do the assignment through mobile apps or the website. Hence, the type of technical difficulty, being errors or delays, is really not the focus of the question here. Asking students these questions can help understand the nature of the technical difficulty they faced because knowing it would help in future planning of similar assignments. Students reported facing more difficulties with VoiceThread, 60% with the website and 48% with the mobile app. SoundCloud numbers regarding technical difficulties, however, were significantly lower with 15% for the website and 38% for the mobile app. We can conclude here that students found SoundCloud.com to be an easier alternative as an asynchronous, voice recording Web tool.

Statements 11 and 12 explored students’ motivation or willingness to do more OSAs. 4 students (15%) preferred to practice in class only, and 2 students (7%) indicated that they were not willing to do more assignments. These results did not seem consistent with the reluctance and the delays that occurred in assignment submissions. Therefore, more detailed interviews were required to validate these results.

Statements 13 to 14 probed how students felt about posting their voice recordings and about other people listening to them. 16 students did not mind recording and posting while 11 did mind. The same numbers were reflected in the next statement in that 16 students did not like being listened to while 11 disagreed to that. Most students seemed to be not comfortable about posting their recordings publicly. This can be viewed in light of the earlier mentioned study (AlOkaily, 2016) where lecturers felt that it might be culturally inappropriate to ask female students to record audio/video of themselves speaking and post it on an online platform.
Table 2. Interview questions and rationale

<table>
<thead>
<tr>
<th>Main Question</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>What challenges did you face when doing your online speaking assignments?</td>
<td>To encourage students to elaborate on the challenges they faced.</td>
</tr>
<tr>
<td>Why, do you think, students did not respond quickly to the assignment? I needed to remind them several times to do it.</td>
<td>By referring to other students, I intended to make the interviewee less embarrassed because the question implies that it was about other students and not about her so that she would not feel defensive about why she delayed her submission (if she had been among those who delayed it).</td>
</tr>
<tr>
<td>Any suggestions for the future? How can we better use online speaking assignments with future classes?</td>
<td>This is another way interviewees can think of barriers or challenges. To explore which aspect they would have changed in the assignment to render it more doable.</td>
</tr>
<tr>
<td>What number of assignments, do you think, would be reasonable for a whole course?</td>
<td>To assess if they would be willing to do more or if they thought that three assignments were too many.</td>
</tr>
<tr>
<td>Did you feel these assignments improved your speaking skills?</td>
<td>To validate reported benefits from phase 1.</td>
</tr>
</tbody>
</table>

Statement 15 asked students to choose which sharing mode would be more acceptable for them: publicly, with teacher only, or with teacher and classmates only. Although 22 students (81%) chose to share with teacher and classmates, the one student who chose ‘with teacher only’ was allowed the option of not sharing.

Statement 16 was added for the purpose of identifying which digital device students were using in an attempt to associate type of device with degree of difficulty. This proved to be difficult to find out due to the fact that half the students indicated using more than one device.

The open ended question, ‘In general, how do you feel about online speaking assignments?’, was answered by 19 students. After doing a content analysis by looking at the themes mentioned in the responses, I found that the responses can be broken down to 49 comments with identifiable patterns (Table 4).

For example, 14 indicated that the assignments were useful by using the term ‘useful, good way, benefit, and good idea’. 5 indicated that it gave them better IELTS practice, another 5 mentioned collaboration, and 3 described the repetition process in recording as very helpful. 2 students mentioned benefitting from more practice outside of the classroom. The most significant finding was that 19 comments indicated improvement in speaking skills, fluency, vocabulary, and confidence. These results will be validated in the qualitative phase later.

4.2 Qualitative data analysis

Open coded analysis (Flick, 2009) was used, and the main themes found answered the research questions in that students identified barriers to be technical, motivational and cultural, with an added personal barrier in terms of shyness or lack of confidence. Moreover, the benefits were identified as: improving speaking skills, better IELTS preparation, becoming more confident, learning through collaboration, usefulness of listening to one’s own recording and identifying mistakes. The following sections provide detailed analysis of these findings.

4.2.1 Benefits

All six interviewees reported benefiting from the assignments as a whole. Four of them mentioned recording, identifying errors, and rerecording in particular. Interestingly, this point was mentioned as both a challenge and a benefit.

“It took time to record because the first time I recorded, I had a lot of grammar mistakes and pronunciation mistakes. But when I repeated the recording, I fixed all these problems. It is very good when you listen to your own speaking.” (Muna)
Table 3. Questionnaire statements and results

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 The Online speaking assignments were efficient in improving my overall speaking skills.</td>
<td>17</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2 The Online speaking assignments helped me prepare for the IELTS exam.</td>
<td>20</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3 I listened to my recording before submitting it.</td>
<td>18</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4 I sometimes needed to repeat my recording at least once.</td>
<td>11</td>
<td>15</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>5 I got more ideas to speak about from listening to my classmates' assignments.</td>
<td>17</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6 Sharing the Online speaking assignments helps students learn from each other.</td>
<td>20</td>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7 I faced errors and delays while trying to use the VoiceThread website.</td>
<td>4</td>
<td>12</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>8 I faced errors and delays while trying to use the VoiceThread app on my mobile phone.</td>
<td>7</td>
<td>6</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>9 I faced errors and delays while trying to use the SoundCloud website.</td>
<td>1</td>
<td>3</td>
<td>14</td>
<td>9</td>
</tr>
<tr>
<td>10 I faced errors and delays while trying to use the SoundCloud app on my mobile phone.</td>
<td>3</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>11 I would rather practice speaking in class only.</td>
<td>2</td>
<td>2</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>12 I am willing to do more online speaking assignments.</td>
<td>12</td>
<td>13</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>13 I don’t mind recording my voice and posting it somewhere on the Internet.</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>14 I don’t like anyone to hear my voice.</td>
<td>3</td>
<td>8</td>
<td>13</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4. Open-ended question analysis

<table>
<thead>
<tr>
<th>Total number of responses</th>
<th>19</th>
</tr>
</thead>
<tbody>
<tr>
<td>number of comments after breakdown</td>
<td>49 100%</td>
</tr>
<tr>
<td>improved speaking skills, fluency, vocabulary, and confidence</td>
<td>19 33.8%</td>
</tr>
<tr>
<td>useful, good way, benefit, and good idea</td>
<td>14 28.6%</td>
</tr>
<tr>
<td>Better IELTS preparation</td>
<td>5 10.2%</td>
</tr>
<tr>
<td>learning through collaboration</td>
<td>5 10.2%</td>
</tr>
<tr>
<td>useful repetition in recording process</td>
<td>3 6.1%</td>
</tr>
<tr>
<td>more practice outside of classroom</td>
<td>2 40.1%</td>
</tr>
<tr>
<td>new idea (innovative assignment)</td>
<td>1 2%</td>
</tr>
</tbody>
</table>
In another example, Salma mentioned increased confidence and fluency: “It really helped me improve my speaking and be more confident. It’s the repetition that helped. Having to repeat the recording several times made me more fluent.” She also talked about how being conscious that other students will listen to her response motivated her to perfect her recording: “I had to redo the recordings several times until I felt everything was correct so that anyone who listens would benefit from it and not hear mistakes.” This shows that students realized the benefit of having to record, assess, repeat recording several times and how it provided good practice.

The fact that these assignments were a good opportunity to practice at home was noted by Mariam:

“This assignment was very useful. In the past, I tried to find anything online to help me with my speaking skills but couldn’t. These assignments gave me the chance to develop and improve and talk for a long time. We have one hour in the class but my teacher gave me the chance to practice at home too at any time and get a high score in the IELTS.” (Mariam)

Aalia, on the other hand, pointed out the peer learning aspect of the assignments: “They will benefit from hearing themselves speak and from hearing their classmates”. She mentioned collaboration several times, specifically to overcome technical issues: “Downloading the SoundCloud app took a long time because of the Internet. After that I didn't know how to create an account. I asked my friend and I asked you and got the help I needed.” This point was reiterated by all interviewees which shows that there was cooperation among students to address technical issues and peer learning through listening to other students’ responses.

4.2.2 Challenges.

4.2.2.1 Technical challenges

Having technical difficulties was repeatedly mentioned in the interviews, although the web tools used are two of the most reported for their user-friendly interface and ease of use - as mentioned earlier in the literature review. This can only mean that students are not as tech-savvy as we might think they are. All six interviewees reported facing technical problems but they also reported how they helped each other to overcome them. They also reported that some devices were easier to use with certain web tools, for example, Muna preferred using her laptop because her Android mobile phone was more difficult to use. She also said: “Some students don’t use technology a lot. This is a big problem.” clearly referring to the lack of digital skills. Salma also mentioned how she had to try several times with the help of the instructions sheet. She said: “I had to print the instructions of how to use SoundCloud. The one you sent us. I had to try several times before I could register with the website.”

The fact that they were instructed to make their recordings private on SoundCloud and share the link with others through Google drive, added to the difficulties they faced. Lamia mentioned this point quite clearly and mentioned also how she overcame it through collaboration. “I did face some trouble because I didn’t know where to send the link or how to share it and how to follow my classmates on SoundCloud. But we helped each other and solved these problems.” She also pointed out to the fact that VoiceThread was too slow to load that she did not want to continue with the assignment. This issue mainly occurs due to the different capabilities of students’ devices. Some have more powerful devices that enable fast processing of data and fast downloads, while others have less capable devices. This is a documented issue with BYOD (Bring Your Own Device) strategy for technology integration (AlOkaily, 2013, 2015)

4.2.2.2 Motivational challenges

In this particular teaching context, lack of motivation is more of an issue because all forms of assessments are not included in students’ GPA. Students do not feel an immediate need to do all that is required from them. Therefore, students pick and choose what suits them and mostly, what they pick is not really much. This point became clear when they were asked about why ‘other’ students delayed their assignments. They didn’t feel defensive and found it easier to discuss the reasons as the reference here was to ‘other’ students not themselves. Muna explained that “some students don’t like to work a lot for studying.” and Mariam reiterated that “it all depends on their mood. Some people are not disciplined. They don’t want to do any work.” Reham, too, pointed it out by saying “some others are just lazy. They think that they don’t have to do it.” Lamia and Aisha, on the other hand, were straightforward and talked about themselves:

“I didn’t feel it was important at first. I thought ‘let other students do it’. But when I started to do it, I was encouraged to do more.” (Lamia)

“It wasn’t difficult but maybe we got busy with other assignments. I find it difficult to do any assignments at home because of my children. I am only free after 10 pm but by that time I’d be too tired and sleepy.” (Aalia)
4.2.2.3 Cultural, technological incompatibilities

Cultural values, as explained earlier in the Context of the Study section, seem to influence students’ behaviour in this part of the world. Signs of this can be observed in their conduct, preferences, dress code, among other signs (Diallo, 2014; Rapanta, 2014; Finlow, 2001). When probing this area in the interviews, some indirect signs surfaced through references to being ‘afraid that someone would hear the recording’ (Salma) or not wanting ‘to post their recordings where someone might listen to them’ (Muna).

One interviewee, Mariam, who was chosen for the purpose of being observant of culture, explained why it took her longer to do the assignments. She explained that there had been a discussion between herself and her parents regarding the issue of recording her voice and sharing it. She said:

“A major reason is our traditions and our parents. My parents did not allow me, at first, to record my voice and share it on the Internet, especially my father. He said it was not allowed in our religion. My mom did not object a lot and told me that I could do it if I was confident that my teacher will not share my recordings with people other than the classmates. I trust my teacher and that’s why I recorded my voice. I don’t mind if my classmates listened to my recordings but other people are not allowed.”

This is mainly a concern that can be contextualized within the traditions that shape cultural norms in the UAE. Although this case represents a minority of students, it should still be respected and students should not be put in a situation where their recordings are made public without their consent. In fact, another student from the class refused to share and sent her recording via WhatsApp in one occasion and by email in another.

5. Discussion

5.1 Validation and explanation of overall results

Both qualitative and quantitative results provided evidence that students benefitted from the OSAs. The results showed that students’ overall perceptions of their own performance is improved. They felt that they had improved speaking skills and fluency, better IELT preparation, improved self-confidence, collaboration, peer learning, and increased learner autonomy through error detection and self-correction. These themes emerged in the questionnaire and were recurrent in the interviews. The technical issues were indicated in the questionnaire but students, as explained in the interviews, managed to overcome them through collaboration and sharing of expertise. The cultural barrier that was questioned through statements 13 and 14 in the questionnaire showed a small number of students who had reservations about the assignments. In the interviews, however, more in-depth knowledge was gained regarding the reason why one student hesitated to do the assignments at first. Having some students with cultural reservations to OSAs is explained in the light of two important facts. Al-Hunayyan & Al-Sharhan (2009) explain this aspect as “Arabic countries have some rich cultures and religious beliefs, which may be violated seriously in the light of the current trends in virtual learning” (p. 2). In this study, the student Mariam needed to discuss the assignment with her parents to assess whether there might be such violation of cultural norms. The conclusion of this discussion was that there is no violation of culture if the recordings remain private to class members. Dunbar, 1991 explains that technologies carry the characteristics of the countries in which they were developed, which carries an implication that a cultural mismatch might occur where the technology is being implemented. Akinyemi (2003) point to the importance of taking the socio-cultural factor in consideration when introducing new technologies. To sum up, the caution and hesitation towards technology use in education is widely documented and explains the caution and hesitation of Mariam and her parents.

The second reason why the cultural issue was pointed by few students only is because the assignments under study were carried out by a female instructor with female students. Male instructors teaching female students would normally hesitate before asking students to do a similar assignment in this context. On the other hand, a female instructor can implement this type of assignments with male students without much worry regarding cultural values. This point is documented in another study in the same context where lecturers explain their concerns towards implementing technology in such a culturally conservative context (AlOkaily, 2016). This is an area worthy of further research to better inform instructors on what instructional technology they can implement within the cultural restrictions of UAE and Arab society particularly gender related research.

6. Conclusion and Limitations

On several occasions, students reported the same factor in a number of different ways. Some aspects of the experience were mentioned as challenges, e.g. having to repeat the recording several times, being conscious of mistakes,
and having technical difficulties. The same aspects were mentioned a second time as benefits, and a third time indicating that overcoming these challenges is what made them improve their skills. This shows that the design of the assignment (figure 2) is successful and students acknowledged how it benefited them.

The findings of this study are context specific involving female students taught by a female instructor. Different results may emerge in other contexts such as that of male students taught by a male instructor, male students taught by a female instructor, a mixed gender class or different geographical or sociocultural context.

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Benefits and barriers of online speaking practice: A case study in the United Arab Emirates


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Exploring E-Portfolio as a new technology tool in Saudi Arabian higher education: A case study

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Abstract

The use of technology in higher education institutions in Saudi Arabia is constantly evolving, especially with the educational-technology support vision called for by the Saudi government. E-portfolios are one of the innovative learning and assessment tools used in many educational institutions worldwide. Stakeholders of one private university in Jeddah, Saudi Arabia were introduced to the idea of e-portfolios, as part of promoting technology use in campus. The purpose of this research is to explore the readiness to adopt an e-portfolio tool and to examine its level of acceptance by students and faculties in a private Saudi university. This case study applies the Technology Acceptance Model (TAM) in examining the willingness of the Saudi campus to accept e-portfolios through collecting quantitative data through questionnaires. The study also conducts a focus group of 20 students who were given the opportunity to learn about e-portfolios and create their first e-portfolios during the research study. Interviews with the university higher management were also conducted to learn more about the university’s drivers needed to adopt e-portfolios. The results of the study highlight the critical success factors that are needed to gain students’ and faculties’ acceptance of e-portfolios. Acceptance factors include technology skills and technology awareness. The study’s results also indicate that proper training and support are main drivers needed to adopt e-portfolios at the university. The study also highlights the use of adjusted elements of the TAM model and the TAM-based
questionnaire built specifically for this study. Researching e-portfolios in Saudi campuses is a great opportunity to add to the Middle East and North Africa (MENA) and The Gulf Cooperation Council (GCC) technology enhanced learning research. Skip to main content

1. Introduction

1.1 Saudi Arabian higher education

Saudi Arabian higher education of public and private universities and colleges and other educational institutions located in different geographic regions in the Kingdom. Public universities provide free education for citizens and are funded by the government. Private universities and colleges provide alternate options to public universities and may have new or different programs and courses (Aldiab et al., 2017). All higher education institutions follow the regulations of the Saudi Ministry of Education. In addition, several national and international accreditation bodies are adopted by various institutions to ensure the quality of their programs.

With the 2030 Saudi Arabian vision, the Kingdom has adopted a new vision and strategies for the development of Saudi Arabia to become one of the most advanced countries in the world in both the economic and educational sectors by 2030. Thus, Saudi higher education institutions have adopted this vision and sought to apply the key objectives of research, entrepreneurship, technology and innovation in their strategic plans (Alharbi, 2016). By this, educational institutions work in developing and improving their technology platform including their learning management system, instructional designs, educational tools and more.

1.2 E-portfolios

Adopting electronic tools in higher education, facilitate and enhance the learning and administrative experience in academic institutions. E-portfolios are one of the tools sought by many educational institutions to achieve this enhancement. E-portfolios are a digitized collection of artefacts such as presentations, assignments, assessments, CVs, achievements, rewards, notes, annotations, skills and competencies, images, movies, journals and more (Jwaifell, 2013).

Academic research about e-portfolios varies between highlighting e-portfolios challenges and opportunities and examining the effects of e-portfolios in learning, assessments and more. Examining institutions readiness and acceptance worldwide to e-portfolios also has a lot of published research. Researching e-portfolios in the Gulf cooperation council (GCC) region, especially in Saudi Arabia is moderate. GCC studies explored e-portfolio and its usage and application among students, faculties, and universities’ admin. To add to the research field of the Saudi higher education research, the focus is shifted to explore how university’s stakeholders deal with the introductory of e-portfolio as a new tool that has not yet been used. Exploring such innovative technologies in Saudi Arabia’s higher education adds to the Technology Enhanced Learning (TEL) field in the MENA and GCC regions and provides an opportunity for development and enhancements in the education sector in the region.

1.3 Research context

The University of Business and Technology (UBT) is a private university in Jeddah, Saudi Arabia. It is located in the city of Jeddah. Jeddah is a centre for money and business in the Kingdom of Saudi Arabia and a major important port on the Red Sea. It is a modern city and gateway for pilgrimages to the Islamic holy cities Mecca and Medina (Municipality, 2020). UBT is a private university in Jeddah, Saudi Arabia with around 5000 students and 250 faculty members. It has 2 main campuses, Dahban (male campus) and Jeddah (female campus), with four colleges (College of Business Administration, College of Engineering, Jeddah College of Advertising and College of Law) (UBT, 2016).

UBT shares similar characteristics with its MENA and GCC peers. UBT employs a face-to-face traditional learning environment with the use of ICT in learning utilizing LMS, online libraries and databases. UBT employs a set of different national and international accreditation bodies to ensure the quality of its programs and international collaboration in research, teaching, partnerships and projects (UBT, 2016). UBT has shifted to online classrooms during Covid-19, like most institutions around the world. This facilitated the use of current online resources and facilitated the addition of other new technological tools.

The researcher is a faculty member in the Management of Information System (MIS) department. The research study was conducted in the academic term of Spring 2017; and was intended to investigate the students and faculties’ perception about e-portfolios and their readiness to use e-portfolio as a new tool in campus. Thus, the research intended to highlight the benefits and usage of e-portfolios and to check whether such a technological tool would be accepted amongst the university’s students and faculties.
The university always seeks to develop and improve its learning tools. E-learning research is encouraged and supported by the university. The idea to investigate the application of e-portfolios for the first time was initiated by the researcher. The use of e-portfolio has potential appeal to the university as it aims to enhance the learning experience for both faculties and students and helps to highlight the work of graduates to stand out in the Saudi market. In addition, a lot of other benefits for e-portfolios that can be explored related to assessments, reflection and more. Thereby, adding to the Saudi educational research field and fulfilling innovative goals and developments, can all be a result of researching UBT’s adoption to e-portfolios.

2. Literature review

2.1 Technology in MENA higher education

The Middle East and North Africa (MENA) regions aim to improve education as a mean for enhancing and increasing economic growth. The MENA regions calls for a change in the education systems, especially the higher education sector. Although, the model for economic evolution in MENA countries varies from country to country, but all share an ancient history and a remarkable cultural heritage (Salah et al., 2015). MENA’s higher educational institutions aim to use technology in education to improve the students’ education experience and to motivate tutors in their educational role.

The path to the development of technology education in the MENA region was led by the Gulf countries, Jordan and Lebanon (Salah et al., 2015). They were the first in the region to bring modern technologies into their higher education systems. MENA countries established many collaborations with western universities. Increasing such partnership helps to improve education and support research and share expertise in new teaching methods and curriculum development. Examples are New York University in the United Arab Emirate, and Texas A&M University and Carnegie Mellon University in Qatar. Saudi Arabia institutions has established various international partnerships and collaborations. Part of the improvement in educational systems, for example, Saudi institutions focused on development and innovations such as King Abdullah University for Science and Technology. Similarly, Jordan institutions focused on developing evaluation systems, teacher quality, and on the development of students’ skills. Such opportunities were supported in the World Bank report in regards of reforms of education and teaching systems in the MENA region as Jordan, Tunisia, and Saudi Arabia) (Salah et al., 2015).

The support for technology in learning in the MENA region has increased part of the educational and economic developments. The recent Covid-19 epidemic global lockdown of the educational institutions worldwide caused a mandatory shift in education from face-to-face to an online platform, forcing universities worldwide to adapt quickly to the necessary technology tools to help them deliver learning to their students. The Saudi Ministry of Education had an emergency educational plan ready for all levels of education. Part of the planning for this involved recommending different assessment methods to help with the emergency online learning platforms and e-Portfolios was one on the approved recommended assessment lists.

2.2 E-portfolios adoption

For institutions that have not yet used e-portfolios, it is important to investigate the factors needed to implement and adopt them. There are a lot of research studies exploring factors related to students and faculties’ readiness of adopting e-portfolios. The study of Mohamad et al. (2015) examined students’ readiness by studying specific technology constructs such as internet skills and technology acceptance. Though, the authors’ approach was more related to the adoption of technology rather than e-portfolios adoption. The study focused on ensuring students having certain basic skills that would allow them to fully utilize online tools in general. But the study did not include constructs specified for e-portfolios as work samples, CVs and certifications. To research the Saudi context, this paper can incorporate examining constructs related to both e-technology and e-portfolios.

Faculties’ interest to adopt e-portfolio was examined in Blevins’s thesis study (2013). But, compared to other studies, Blevins focused on examining a Diffusion of Innovation Model (DOI). DOI is a complex model. To use a similar model in the Saudi study requires the help of a DOI expertise who will monitor and adjust the framework and add the appropriate variables that best suits its context. For this, a simpler model as TAM (Technology Acceptance Model) can be recommended in this case study.

Other studies focused on determining the drivers that will help in adopting technology. The research thesis of Prescott (2013) examined different drivers that ranged from institutional drivers to individual drivers that can help to adopt technology. Thus, Prescott’s (2013) study spent much effort on detailing drivers to accept any e-technology in general. Though, each potential system to be adopted may have different drivers. For example, adopting e-portfolios may require mainly the individual skills, whereas a student-ad-
vising system may require environmental variables as time allocation. The Saudi context can follow a similar approach of examining drivers fit for e-technology and e-portfolios specifically.

Other benefits of adopting e-Portfolios were nurturing creativity and critical thinking abilities for master students in a higher education institution in Ireland. Adopting e-Portfolios helped in enhancing a creative learning process. O’Keeffe and Donnelly (2013) outlined their strategy in e-Portfolio development as this was applied to 14 students. The strategy included showcasing previous e-Portfolios, e-Portfolio software training, training in use of multi-media, reflective writing sessions, peer presentations of e-Portfolios and instructors’ feedback. This research case study follows the same path of training and introducing samples of e-Portfolios to highlight the benefits of such tools. UBT’s case involves interviewing the university’s higher management to provide a wider image on facilitating the adoption of new technology tools.

2.3 E-portfolios acceptance

There are a lot of research studies exploring e-portfolios acceptance. The study of Chen et al. (2012), showed that students are willing to use e-portfolios as they can perceive its usage. The university’s admin needs to try to promote students’ computer self-efficiency and online and off-line support. The study though used a complex combined theoretical framework of both TAM, and ISSM (Information System Success Model). It also added external variables related to quality as quality of system, quality of information and more. Examining quality elements for a system that is not yet applied may not be applicable. For this, the TAM model can be best applied in this Saudi research study.

Like Mohamad et al. (2015) and Prescott (2013) studies, examining e-technology acceptance in general instead of just focusing on e-portfolios was the aim of the Beresford and Cobham (2010) study. The study’s aim was to understand students’ acceptance to technology and web2.0 tools. This helped to understand students’ perceived usage of e-portfolio by considering their online storage habits and their understanding of e-portfolios artefacts. Though, the study conducted covered only computing students. To fill this gap, The Saudi context can attempt to examine acceptance of e-portfolios using both a focused group and the large body of the university students.

2.4 E-portfolios in MENA, GCC and Saudi Arabia

There are several studies that can help Saudi Institutions research of e-portfolios as these studies conducted in the neighbouring GCC, and MENA region have examined institutions that successfully implemented and used e-portfolios. A study in Zayed University in the neighbouring United Arab Emirates was conducted in 2009 to examine its own existing e-portfolio system (Tubaishat & Lansari, 2013). The study examined e-portfolios’ role in achieving outcome-based education with emphasis on satisfying accreditation requirement of assessing learning outcomes. The study raised questions though on how students got engaged with e-portfolios? What major elements helped the students to accept and use e-portfolios? Achieving learning outcome was a desired goal aimed by the university’s admin, accreditation body and faculties, but it was not a common motivator for students. Other evidence is needed to be investigated to test students’ engagement. This engagement can be investigated when researching MENA, GCC students and specifically Saudi Arabian students.

Other studies focused on examining e-Portfolios for the first time. Alajmi (2019) examined the use of e-Portfolios in Prince Nora University in Riyadh, Saudi Arabia, where the use of paper e-Portfolio is more widely used. The study examined the need to recognize the association of using e-Portfolios for the developments of professional standards and life skills as the basic skills of communications, analytical skills, and effective skills as career developments. Alajmi (2019) surveyed students about their skills and the strength and weakness and how e-Portfolios helped them.

A study conducted at Sharjah University in UAE examined the use of e-Portfolios in medical education (Elshami et al., 2018). The students used e-Portfolios through the Blackboard Learning Management system. Students were required to submit their learning artifacts and teachers were required to evaluate and assess them. The potential usage of e-Portfolios in clinical training was effective in the reflective and constructive feedback and the use of formative and summative assessments. Students in the study were satisfied and were willing to use e-Portfolios in their next clinical work.

Similar to the objective of this Saudi case study, an earlier study in an English language centre at the Middle East Technical University in Ankara, Turkey, students were introduced to e-Portfolios for the first time (Baturay & Daloğlu, 2010). The study clarified how e-Portfolios can be used as a practical alternative to standardized testing. The study also shed light on the benefits of e-Portfolios as it gave students the chance to self-assess their language developments and think how they can improve their future work.
In regards of examining e-Portfolios using acceptance models as TAM, there were not a lot of research studies exploring acceptance and adoption of e-portfolios in Saudi higher education. Most studies focused instead on examining acceptance of new technologies of learning management systems (LMS).

In a paper by Alharbi & Drew (2014), TAM model was used to examine Saudi students’ usage of LMS. The use of TAM framework allowed the researcher to foresee the adoption of LMS in Saudi institutes which can be a base to explore acceptance of other electronic tools. The study had added external variables to their TAM framework as lack of LMS, and job relevance. The study though did not indicate the reasons for choosing these external variables. Knowing what external variables to add in a theoretical framework could help future studies in Saudi institutions which can be helpful in exploring e-portfolios or any other technology in institutes.

There are various e-Portfolios software tools available to allow students and faculties create their e-Portfolios. Matar (2015) from the department of Software Engineering in the Applied Science University in Amman, Jordan conducted an evaluation study of 6 different e-Portfolio tools: Pebble, Mahara, Giunti, Premier IT, PET, and Moodle + Exabis. The survey evaluation examined elements as curricular related features, assessment, publish/share, analysis tools, customization and more. The study found out that both Mahara and Moodle + Exabis are the best two choices for choosing an e-Portfolio system within an educational context. The study helped to set a map for choosing the necessary e-Portfolio system by providing different categories for evaluation. UBT does not have a specified e-Portfolio system. Therefore, the research case study will make use of Microsoft OneNote to explore e-Portfolios.

3. Research questions

- RQ1: How do institutional stakeholders perceive the introduction of an e-portfolio tool in UBT, a private Saudi Arabian university in Jeddah, where a tool of this type has not been used yet?
- RQ1.1: To what extend the students can accept introducing a new technological tool as e-portfolios?
- RQ1.2: To what extend the faculties can accept a new technological tool as e-portfolios?
- RQ1.3: To what extend the university can adopt new technologies such as e-portfolios?

4. Theoretical framework

In order to determine the acceptance of e-portfolios and answer the research questions, data collected will help to examine the e-portfolios acceptance by the university’s stakeholders. Based on Chen et al. (2012) and Blevin’s studies (2013), a simpler model for theoretical framework is recommended for UBT’s Saudi context. For this, the theoretical model of the Technology Acceptance Model (TAM) is used in this research study (Davis, Bagozzi, & Warshaw, 1989). TAM can be used to test the perception of students and faculties of ease of use of e-portfolios, and perceived usefulness, attitude toward e-portfolios and intention to use.

TAM elements are adjusted slightly to best suit UBT since e-portfolios have not been used by any of the university stakeholders yet. There are no external variables, however, each TAM element will be adjusted to include tested variables that fit the Saudi university’s context. Below is the explanation of the adjustment in each TAM element.
Exploring E-Portfolio as a new technology tool in Saudi Arabian higher education

https://doi.org/10.21428/8c225f6e.0e590f93

Figure 2. Research Design Framework

4.1 Perceived potential usefulness of e-Portfolios

This element will explore students and faculties perception of the potential usefulness of e-portfolios. It intends to examine this by highlighting related benefits of e-portfolios as learning benefits, storage and showcasing benefits.

4.2 Perceived ease of use of technology

The approach here is similar to Mohamad et al. (2015), Prescott (2013) and Beresford & Cobham (2010) where I will seek to check students’ and faculties’ perceived ease of use of e-technologies (not e-portfolios). For example, examining if a UBT faculty can use the internet easily, upload files in Moodle easily, and edit word documents, this may lead to equip them to be ready for e-portfolios.

4.3 Attitude towards using e-Portfolios

This covers the attitudes of the participants who intend to use and adopt e-portfolios, based on its potential benefits.

4.4 Intention to use

This covers the intention to use elements of e-portfolios as storing work online, sharing it, tracking progress and more. If participants have intended to use these elements, then they may have intention to use e-portfolios.

4.5 Research design framework

A model is constructed to build the theoretical model needed to collect the data and analyse the results. Check Figure 2 below. Questionnaires are based on the adjusted
TAM model to test students' and faculties' acceptance of e-portfolios. The focus group is used to check the acceptance of students who actually used e-portfolios for the purpose of this research. The focus group is based on Cousin (2009). Semi-structured Interview questions aimed to the university's admin about e-portfolios adoption are also based on Cousin (2009).

5. Methodology

The research conducts a case study that collects both quantitative data (questionnaires) and qualitative data (focus group and semi-structured interviews).

5.1 Case study

The research study conducts a case study at the University of Business and Technology (UBT) in Jeddah, Saudi Arabia, where e-Portfolios have not been used yet. The research collects both quantitative data through questionnaires and qualitative data through interviews. The research surveys both UBT students and faculty members about their perception of the e-Portfolio tool. The researcher interviews the university’s higher management about the potential use of e-Portfolios in campus. During the research study period of the academic term of Spring 2017, the researcher also conducts a focus group consisting of MIS students who were nominated to create and use e-Portfolios for the first time in campus. Participation is voluntarily for all methods.

5.1.1 Questionnaires

Participants of the questionnaire are UBT students and faculties from both the female and male campuses. Survey questionnaires constructed based on the TAM model test perception and expectations of both students and faculties. 2 questionnaires were distributed, one for the university’s students sent through the Moodle platform (posted to around +2000 students). The other questionnaire was sent to the university’s faculty members (around 100+ faculties) through the university email system. Google forms collected the data.

Since the majority of UBT students and faculties did not use e-portfolio yet and few may not know what it is, the online questionnaire in Google forms started with an introduction paragraph explaining what e-portfolio is. It also contained an embedded YouTube video introductory of e-portfolios. This helped the participant to have general information about e-portfolios before starting to fill the questionnaires.

5.1.2 Focus group

Around 20 MIS students have been nominated to use and apply e-portfolios for the first time at UBT. The students are senior MIS students who are upcoming graduates and they agreed to participate. Students were nominated by the researcher because of their advance skills to learn new software. They attended an introductory workshop at the start of the academic term on how to use Microsoft OneNote to create e-portfolios. They were required to build their e-portfolio by adding artefacts from one current course and another previous one. They were asked also to create a CV. After the submission of their e-portfolios task, a group session was conducted to get their feedback about the experience, their opinions of e-portfolios, and the advantages and disadvantage they view in regards of e-portfolios.

Table 1. Focus group participants

<table>
<thead>
<tr>
<th>Participants</th>
<th>From Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 MIS senior students</td>
<td>MIS 440 and MIS 470 taught by the researcher</td>
</tr>
</tbody>
</table>

5.1.3 Semi-structured interviews

Cousin (2009) Interview protocol was used. The participants were the university’s senior management who influence decision making in adopting software: 3 senior management admin (Vice Rector, Dean and IT Director). The interview questions focused on finding the perspective of the university’s management when dealing with new technology. The interview questions were sent ahead of time to the participants, so they can have a chance to view them before the interview. An appointment was scheduled with each participant soon after. Live interviews were conducted, and follow-up questions were asked for clarifications.

5.2 Ethical approval and limitation

The Dean approved conducting the research in the uni-
versity campus. Students and faculties who filled the survey had a written welcome message explaining the purpose of the survey and that their participation was voluntary. In terms of limitations, the number of survey response was low. Out of thousands of students, only hundreds responded. The same status is also true for the faculties. MIS students participated voluntarily in the focus group, and they were free to withdraw at any time and remove their data. But all were thrilled to try the new e-Portfolio tool and be one of the first creating their online e-Portfolios at the university.

6. Results

6.1 Questionnaires results

Out of UBT’s total students and faculties, 215 students answered the questionnaire, 81.4% were female students, and 18.6% were male students. 35 faculty members answered the questionnaire in which 65.7% were female and 34.4% were male. The questionnaire’s results display descriptive data collected from surveying students about their perceived ease of use of e-portfolios, perceived usability, attitude of usage and intention to use (TAM elements). TAM adjusted elements are listed next to discuss the results.

6.2 Students’ questionnaires findings

6.2.1 Students perceived potential usefulness of e-portfolios

The results of the questionnaire indicated the top 3 perceived potential usefulness of e-portfolios viewed by the university’s students. They were: be more independent learners, keep track of the learning experience and have an online storage for course work. In contrast to Mohamad et al. study (2015), this research case study examined constructs mainly related to e-portfolios as storage, sharing and learning.

6.2.2 Students perceived ease of use of technology

The ease of use of technology is essential to accept any new software (Davis, Bagozzi, & Warshaw, 1989). Current UBT students are comfortable using the internet, the computers, LMS, and word procession software. Some of them though feel they lack the design and graphics skills needed to be innovative and add creative elements to their e-portfolios. In this case, following the same approach of Mohamad et al. study (2015), the researcher clarified that basic computing skills and internet skills may enable students to use e-portfolios. If UBT students and faculties scored a high percentage in the use of Moodle and other applications, this means since they can upload files in Moodle, and edit documents, then, it may be easy for them to use e-portfolios (Table 3).

6.2.3 Students’ attitude toward usage of e-portfolios

The students were able to have an idea about e-portfolios through answering the questionnaires and viewing the introductory YouTube video in Google forms. So, checking their attitude toward the usage of e-portfolio soon, 64.6% expressed interest in adopting e-portfolios. 61.9% wish that UBT would adopt the software. 61.1% intend to use the tool if UBT adopts it. The percentages are reasonable considering that they had not used the tool yet (Table 4).

6.2.4 Students’ behavioural intention to use

The questionnaire results showed that the top 3 intentions for the use of e-portfolio by UBT students were to keep records of their assignments, projects and course activities. UBT students displayed disinterest in using e-portfolios for keeping reflective journals. 63% of UBT students displayed interest in using e-portfolios to store their work. “It seems an amazing tool”, one student responded. Concerns also were shared among students in the open-ended questions. Their main concerns were about the privacy and protection from hackers and viruses attacking their online content; this was not a concern in any of the provided literatures. The study of Blevins (2013) identified in contrast to the finding of this research, that students favoured using e-portfolios because of availability and security. So, proper awareness can be added to the training of UBT students to ensure awareness of privacy issues and security. IT protection and security can be emphasized.

6.3 Faculties’ questionnaire findings

6.3.1 Faculties perceived potential usefulness of e-portfolios

The results of the questionnaire indicated that the top 3 perceived usefulness of e-portfolios viewed by the university’s faculties were the ease of transporting course work and the ability to store it online and the ability to add digital content to one’s portfolio (Table 5). This is different from Blevins’s study (2013), where faculties had different interest in the use of e-portfolios. They were mostly interested in tracking students learning. Therefore, it is important to define Saudi’s own context in regards of what variables to examine. Once the tool is used, workshops on e-Portfolio’s usage can be explored further.
Table 2. Students perceived potential usefulness of e-portfolios

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Be more effective and independent learner</td>
<td>59.7%</td>
<td>23.2%</td>
<td>11.8%</td>
<td>2.4%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Easy storage of my course work</td>
<td>56.9%</td>
<td>19.4%</td>
<td>17.1%</td>
<td>3.8%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Keep track of my learning experience</td>
<td>55%</td>
<td>22.7%</td>
<td>15.2%</td>
<td>5.2%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Be easily transport my course work</td>
<td>48.8%</td>
<td>27%</td>
<td>17.1%</td>
<td>4.7%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Add digital content to my e-portfolio</td>
<td>46.4%</td>
<td>23.7%</td>
<td>19.9%</td>
<td>6.2%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Share my e-portfolio with future employers</td>
<td>42.2%</td>
<td>22.3%</td>
<td>26.1%</td>
<td>6.2%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

Table 3. Students perceived ease of use of technology

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet is easy</td>
<td>70.1%</td>
<td>19%</td>
<td>5.7%</td>
<td>1.9%</td>
<td>3.3%</td>
</tr>
<tr>
<td>Moodle is easy</td>
<td>68.2%</td>
<td>17.1%</td>
<td>9.5%</td>
<td>2.4%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Computers are easy</td>
<td>63%</td>
<td>19%</td>
<td>9.5%</td>
<td>4.7%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Uploading and downloading files is easy</td>
<td>62.6%</td>
<td>18.5%</td>
<td>11.8%</td>
<td>4.3%</td>
<td>2.8%</td>
</tr>
<tr>
<td>Word processing is easy</td>
<td>56.9%</td>
<td>24.2%</td>
<td>11.4%</td>
<td>3.8%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Using e-portfolios can be easy</td>
<td>35.5%</td>
<td>28.4%</td>
<td>21.8%</td>
<td>10.4%</td>
<td>3.8%</td>
</tr>
<tr>
<td>Graphic design is easy</td>
<td>20.4%</td>
<td>18%</td>
<td>39.3%</td>
<td>14.2%</td>
<td>8.1%</td>
</tr>
</tbody>
</table>

Table 4. Students’ attitude toward usage of e-portfolios

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopting e-portfolio will be a great idea</td>
<td>35.3%</td>
<td>29.3%</td>
<td>21.4%</td>
<td>10.2%</td>
<td>3.7%</td>
</tr>
<tr>
<td>I wish ubt adopts e-portfolios</td>
<td>34.9%</td>
<td>27%</td>
<td>23.7%</td>
<td>10.2%</td>
<td>4.2%</td>
</tr>
<tr>
<td>I intend to use e-portfolio if the college adopts it</td>
<td>32.2%</td>
<td>28.9%</td>
<td>25.1%</td>
<td>7.6%</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

Table 5. Faculties perceived potential usefulness of e-portfolios

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport my course work</td>
<td>80%</td>
<td>17.1%</td>
<td>2.9%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Store my course work</td>
<td>77.1%</td>
<td>17.1%</td>
<td>5.7%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Add digital content to my e-portfolio</td>
<td>74.3%</td>
<td>22.9%</td>
<td>2.9%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Try new technology</td>
<td>68.6%</td>
<td>20%</td>
<td>11.4%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Place to store sample of course work</td>
<td>62.9%</td>
<td>20%</td>
<td>14.3%</td>
<td>2.9%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Exploring E-Portfolio as a new technology tool in Saudi Arabian higher education

Studies in Technology Enhanced Learning, 1(2)

https://doi.org/10.21428/8c225f6e.0e590f93

Table 6. Faculties perceived ease of use of technology

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet is easy</td>
<td>80%</td>
<td>11.4%</td>
<td>5.7%</td>
<td>2.9%</td>
<td>0%</td>
</tr>
<tr>
<td>Word processing is easy</td>
<td>74.3%</td>
<td>14.3%</td>
<td>8.6%</td>
<td>2.9%</td>
<td>0%</td>
</tr>
<tr>
<td>Computers are easy</td>
<td>68.6%</td>
<td>14.3%</td>
<td>14.3%</td>
<td>2.9%</td>
<td>0%</td>
</tr>
<tr>
<td>Uploading and downloading files is easy</td>
<td>62.9%</td>
<td>25.7%</td>
<td>11.4%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Moodle is easy</td>
<td>54.3%</td>
<td>34.3%</td>
<td>8.6%</td>
<td>2.9%</td>
<td>0%</td>
</tr>
<tr>
<td>Using e-portfolios can be easy</td>
<td>34.3%</td>
<td>40%</td>
<td>20%</td>
<td>5.7%</td>
<td>0%</td>
</tr>
<tr>
<td>Graphic design is easy</td>
<td>20%</td>
<td>14.3%</td>
<td>37.1%</td>
<td>20%</td>
<td>8.6%</td>
</tr>
</tbody>
</table>

Table 7. Faculties attitude toward usage of e-portfolios

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopting e-portfolio will be a great idea</td>
<td>42.9%</td>
<td>37.1%</td>
<td>14.3%</td>
<td>5.7%</td>
<td>0%</td>
</tr>
<tr>
<td>I wish ubt adopts e-portfolios</td>
<td>34.3%</td>
<td>31.4%</td>
<td>28.6%</td>
<td>5.7%</td>
<td>0%</td>
</tr>
<tr>
<td>I intend to use e-portfolio if the college adopts it</td>
<td>34.3%</td>
<td>40%</td>
<td>20%</td>
<td>5.7%</td>
<td>0%</td>
</tr>
</tbody>
</table>

6.3.2 Faculties perceived ease of use of technology

Like the students, faculties shared the same perception of ease of use of the technology (Table 6). Faculties found the use of internet, computers and word processing software easy. They also shared the same perceived lack of skills in design and graphics. These general technology factors can be helpful. Examining LMS for example, helps to define users’ acceptance for the use of e-portfolios. 88.6% of all faculties found Moodle easy to use. In Blevins’s study (2013), use of LMS (Sakai) was indicated as one of the main resources that supported and assisted faculties in the implementation of e-portfolios.

6.3.3 Faculties attitude toward usage of e-portfolios

The faculties also were able to have an idea about e-portfolios through answering the questionnaires and viewing the same introductory YouTube video in Google forms. Thereby, checking their attitude towards the usage of e-portfolios for future usage 80% expressed interest in adopting e-portfolios, a higher percentage from the students (Table 7). 65.7% wish that UBT would adopt the software. 74.3% intend to use the tool if UBT adopts it.

6.3.4 Faculties behavioural intention to use of e-portfolios

Questionnaire results showed that the top 3 intentions to use e-portfolio by UBT faculties were storing projects, course activities, and presentations. 74.3% of faculty members are interested in using e-portfolio. Though, there were also concerns they shared in the open-ended questions. Concerns such as copy rights of own materials when sharing and collaborating. Also, concerns were about students benefiting from the tool if they did not do the course work themselves and plagiarized. In Blevins's study (2013), faculties concerns were different. Their concerns were mostly about time constraints and lack of support of heads of department.

6.4 Focus group findings

The 20 MIS students submitted the e-portfolios by a specific deadline. The researcher examined all the submitted e-portfolios and provided feedback and some edit suggestions. The students produced very creative, innovative e-Portfolios; sample shown in Appendix. They added their CVs, they highlighted their top projects they have done in the past 2, or 3 years and they made use of the multi-media options of Microsoft OneNote. Soon after the e-Portfolio revision, one meeting was conducted to collect the students’
feedback. One student shared:

Student 1: “I have also added sample of my Artwork using pictures and videos as I needed to share the e-Portfolio with any prospected training opportunity at an innovative company and I wanted to be creative introducing myself instead of relying on regular CV, or even LinkedIn link.”

Based on the collected feedback, a thematic analysis helped to highlight 3 emerging themes: Experience of using e-portfolios, and e-portfolios' highlights and challenges of e-portfolios.

6.4.1 Experience of using e-portfolios

The entire group agreed that they wished e-portfolios were applied when they first started their freshman year at college. If they have started to use it early on, it would have been very motivating. They felt it was too late for them to build their college e-portfolio because all of them are in their last year and they are expected graduates. For students who have been using e-portfolios for a while as in Chen et al. study (2012), they have experienced the benefits of e-portfolios, that is why they are using it. Some even fear falling behind if they do not use it.

6.4.2 E-portfolios highlights

The availability of sharing and collaborating options was one of the highlights of the experience. All the college work is stored in one place. The students enjoyed some of the features of MS OneNote as time stamps, automatic save and edit history. They liked that they could place their CVs also in the e-portfolios. They also liked the storage space they have as a UBT student has a dedicated 1 TB of space. The students indicated that e-portfolios organize their work, and it is simple to use MS OneNote as it is like MS Word. A main highlight of e-portfolios is the removal of the dependency on a USB and local storage devices and use the online options instead. They also indicated that the use of MS OneNote as online e-portfolios is better than Moodle because Moodle remove access of previous courses; only current courses are active ones. So, they are glad to have access to their course work at any time through the e-portfolios. Another highlight is the use of the creative images and drawing tools that help to showcase one’s work. These highlights are all considered drivers for motivation to adopt e-portfolios, similar to the approach of the study of Prescott (2013) defining drivers helps in adopting new technologies. Figure 3 displays some of the highlights of motivation with the use of images, and URL links to be creative in showcasing the students submit-

6.4.3 E-portfolios challenges

It took a lot of time to make an e-portfolio innovative. The students had problems with the use of online MS OneNote version, as some of the features were not available in the online version. They also had issues in the mobile version. They also displayed concerns if the e-portfolios will still be available even after graduation and if they are going to have access to them as alumni. This is similar to the concerns of the students in the study of Wuetherick & Dickinson (2015) who used e-portfolios embedded in LMS,
and it was inaccessible once courses were concluded. UBT’s focus group students also indicated that other applications maybe easier than MS OneNote.

O’Keeffe et al. (2013) also indicated that their 14 students had faced challenges similar to UBT’s case where the major challenges were understanding the purpose of the e-Portfolio and understanding what was needed within the e-Portfolio for assessment purposes. The use of technology was a concern for them especially multi-media and how time-consuming the e-Portfolio work is. Similarly, one UBT focus group member shared her input:

Student 4: “Microsoft online OneNote is challenging to use with the images and videos, I face delays, whereas when I design using the off-campus, PC version, it is much faster, and more tools are available. It does though take a very long time to produce an innovative e-Portfolio like the ones we saw in the training”.

With such challenges faced by the students, the diversity of different software available can give the students a chance to choose. The university can also adopt an official e-Portfolio platform, similar to Mahara and more, that can be integrated with their LMS. Other LMS systems can have add-on blocks for e-Portfolios, all of these are options to explore. Another solution that can help with the use of multi-media and technology is the availability of support and training. This is what Chen et al. (2012) recommends having to ensure adoption of e-portfolios.

6.5 Semi-structured interviews results

The university senior management were interviewed, senior1, senior2, and senior3. The objective of the interview was to check to what extend UBT can adopt e-portfolios. The interview transcripts were coded for themes (Cousin, 2009). Two themes emerged from the interview analysis: e-portfolios drivers and support and training.

6.5.1 E-portfolios drivers

Senior1 emphasised the importance of employing technology tools in facilitating the learning experience for both students and faculty members.

Senior1: “With the current aim of the university to digitize all procedures and tasks in all the departments, including the academic departments, the need to adopt technology tools is a must. This is to ensure implementing a paperless university as the university is currently working on”.

Senior2 perceived the drivers for adopting e-portfolios in campus as enhancing faculties’ teaching and students’ learning. Senior2 also indicated that enhancing the quality of the system provided and matched the trend in new technologies are all strong drivers for adopting the technology.

Senior2: “A great tool for students to organize their work and record their achievements”.

The tool also viewed by Senior2 to be helpful to showcase students’ knowledge and skills for their instructors and future employers. Senior2 indicated that the use of e-portfolios may have huge advantages on the academic professional practice.

Senior2: “I believe e-portfolios if used, will make students assessment more authentic”.

The need for enhanced teaching and learning objectives of UBT is shared with the study of Tubaishat & Lansari (2013) where the e-portfolio objective was to achieve students learning outcome.

To effectively use a new tool, one needs to understand the tool and use it. Senior2 indicated the 3 enablers that help to adopt e-portfolios: to promote the benefits of using portfolio to students and faculty members, to provide sufficient training on using this tool and to provide special awards to those using this tool. On the other hand, the three barriers that may affect the use of e-portfolios were: not having enough awareness of the benefits and usefulness of e-portfolios, the lack of training and the lack of support. Senior1 emphasized the role of the university in providing the needed support to UBT stakeholders utilizing any new technological tool at campus. Senior1 understands the challenges associated with applying new technology and the resistance users may show to new tools, but, with the proper support and training, such challenges can diminish. challenges and procedures can define the Saudi universities’ own procedures in promoting e-portfolios. This is similar to the approach of Chen et al. (2012) in emphasizing the role of university admin and IT in promoting e-portfolios.

6.5.2 Support and training

Support and training are advised by the study of Chen et al. (2012) as its aim is to increase students’ positive perception of e-portfolios.

Senior3: “UBT had implemented Microsoft Office 365 and the license of this service is free because UBT is a qualified academic institution from Microsoft that can
receive Office 365 support and training.”

Senior3 indicated that with any new technology adopted by UBT, a trial period is needed, and an awareness campaign can help to promote the new technology. Senior1 indicated that support is needed to overcome complexity. Effective training sessions, and awareness campaign can help in adopting a new tool into the university system. This is similar to what the study of Wuetherick & Dickinson (2015) called for in terms of support; the implementation of e-Portfolios must be done thoughtfully and with the full suite of support mechanisms in place for students.

6.6 Research questions answers

To answer the main research question RQ1: How do institutional stakeholders perceive the introduction of an-portfolio tool in a private university in Jeddah, Saudi Arabia where a tool of this type has not been used yet, a summary of findings can be used to answer RQ1 and its sub questions.

6.6.1 RQ1.1: to what extent students can accept to use e-portfolios.

Questionnaire results displayed 63.9% of students perceiving e-portfolios to be easy to use. 64.8% of students believed adopting e-portfolio will be a great idea. 61.9% of students wished that the university adopt e-portfolios and they intend to use it if the university adopts it. The students' adaptability to technology and the use of LMS in campus enabled them to accept considering a new tool in education. The students' awareness of the usage and benefits of the tool as in maintaining course work and showcasing their work help them to see the benefits of the tool, therefore accepting it. The focus group analysis also helped to answer RQ1. Students who tried creating e-portfolios for the first time and who used it for a period of time indicate their acceptance to use e-portfolio as they witnessed e-portfolios benefits and objectives. They did though indicate the need for training and support.

6.6.2 RQ1.2: to what extent faculties can accept to use e-portfolios.

Questionnaire results displayed 74.3% of faculties perceiving e-portfolios to be easy to use. 80% of faculties believed adopting e-portfolio will be a great idea. 65.7% of participant faculties wish that the university adopt e-portfolios and they intend to use it if the university adopts it. The faculties awareness of the benefits of e-portfolios and the importance of having an online portfolio enabled them to accept considering a new tool in education.

6.6.3 RQ1.3: To what extent the University is ready to adopt e-portfolios.

Interview analysis indicated the role the university admin plays when adopting a new technology. The emphasis on enough training and available support was highlighted strongly in the interview session. Also, recognizing drivers of e-portfolios help in adopting e-portfolios. Learning about the highlights of e-portfolios through the focus group can help to promote adopting the tool. Learning about the challenges and barriers can help in defining what is needed to ensure smooth adoption of e-portfolios at UBT.

7. Contributions

7.1 TAM

What is unique about this study, is that it examined a technology that was not used yet, compared to most technology acceptance studies that examined technology that is already applied. e-Portfolio was not applied yet at UBT. It was only applied through the focus group. UBT stakeholders shared their views and perception about an upcoming technology that was not used yet. That is why TAM was slightly modified in this study. External variables were eliminated from this adjusted model. Each TAM element was adjusted to include tested variables that fit the Saudi university context, or any context that did not apply a new specific technology yet. The TAM usefulness of the technology element was adjusted to Perceived potential usage. What the users perceive about the usage of this new tool, even before using it. In order to do that, the questionnaire started with an explanation of e-Portfolios and the actual usage for them, a short, animated video link was listed in the questionnaire, so evaluators could view the video and understand more about e-Portfolios before sharing their potential thoughts about it. A similar approach was taken with the rest of the TAM elements. The ease of use of technology was adjusted to the Perceived ease of use of the technology. The Attitude toward using e-portfolios was also adjusted to their perceived attitude since the users are introduced to the idea of e-Portfolios. The Intention to use element, explores the users’ intention after learning about this tool. So, this adjusted TAM model can be used by any other educational institution that is testing the perception of users introducing a new technology in campus. But a similar approach had to be followed, such as enough information must be introduced first in order for users to evaluate this new technology before using it.
7.2 MS OneNote as an e-Portfolio

With the various e-Portfolio tools available in many campuses around the world as Mahara, Pebble and more, the study helped to highlight utilizing the campus resources and making use of the current Microsoft licenses available and use of MS OneNote as an e-Portfolio tool. All UBT students have a Microsoft UBT email account. With this account, students have access to online MS Office, collaboration tools, Tera byte online storage, and many other communication applications and a free download of office in their PCs and laptops. The focus MIS group members have each built their e-Portfolio using MS OneNote. The availability of text, images, and upload files are the main elements needed to create a creative e-Portfolio. Sharing the e-Portfolio is also an important element that is available with MS OneNote. In the recent Covid-19 period, the Saudi Ministry of Education provided guidelines on the different assessment methods and tools that can be used in emergency learning that shifted face-to-face learning to online during the Spring of 2020. E-Portfolio was one of the tools recommended by the Saudi ministry. With the availability of MS OneNote, the transition to different assessments was not difficult with the current availability of MS OneNote and the availability of video tutorials in the learning resources faculty access.

8. Conclusions

For UBT, a Saudi Arabian higher education institute, introducing e-portfolios for the first time for faculties and students helps to research the Saudi academic context when considering new technologies. The adoption of e-portfolios is examined in this research study by means of questionnaires that were distributed to all students and faculties. A focus group of 20 students were selected to use and apply the e-portfolio tool. The study also examined the university’s readiness to adopt e-portfolio as a new innovative tool. The case study of UBT highlights the drivers needed to ensure adoption and acceptance of e-portfolios. The study findings help to highlight guidelines needed to ease the adoption of new technologies. Findings of the study revealed that around 60% of students accept using the new tool of e-portfolio and around 80% of faculties hope to apply the tool at the university. The focus group of students who used MS OneNote to conduct their first e-portfolio indicated the importance to have such a tool from early on. They have also indicated the need to have well detailed workshops to allow them to be innovative to produce creative portfolios. The interviews with the university higher management helped to clarify what is needed to ensure the adoption of the new tool. Proper training and adequate support are key to guarantee a smooth adoption of the innovative technology. The TAM adjusted model used in this case study can be applied in any MENA and GCC higher education institution that is intending to use a new technology.

Future MENA and GCC research may focus on e-Portfolios as assessment tools examined in this current Covid period or online setup. The size of user trials of e-portfolios can be increased to cover larger population of the students and faculties. Further researched cases may study the impact of the other aspects of e-portfolios as collaboration and reflection. This may provide insight on students’ learning behavior and performance.

References


Chen, M.-Y., Chang, F. M.-T., Chen, C.-C., Huang, M.-J., &


Acknowledgements

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About the author

Halah Nasseif is lecturer in MIS in the University of Business and Technology in Jeddah, Saudi Arabia. Her Bachelor of Science degree is in Computer Science from Portland State University and her Master is in Information Technology from Virginia Tech. She has recently earned her PhD in E-Research and Technology Enhanced Learning from Lancaster University. Her PhD thesis is titled: “Learning analytics and dashboards, examining course design and students’ behavior: A case study in Saudi Arabian Higher Education”. Her research interests include researching Saudi Arabian higher education, technology enhanced learning, e-learning utilization, learning analytics, educational data mining, and Networked Learning.

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### Appendix A. Instruments

#### Table 8. Survey questions

<table>
<thead>
<tr>
<th>TAM factor</th>
<th>Questions</th>
<th>Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Ease of Use of technology</td>
<td><strong>1 Strongly disagree ---- 5 Strongly Agree</strong></td>
<td>Faculty/Students</td>
</tr>
<tr>
<td></td>
<td>• Using Computers in general is easy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Using the Internet is easy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Using Word processing is easy</td>
<td></td>
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<tr>
<td></td>
<td>• Using Graphics design application is easy</td>
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<td></td>
<td>• Using Presentation software is easy</td>
<td></td>
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<tr>
<td></td>
<td>• Using Moodle is easy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Uploading and downloading files is easy</td>
<td></td>
</tr>
<tr>
<td>Perceived Usability of e-portfolios</td>
<td>Do you store evidence of your learning including copies of your work, grades, feedback, CV and achievements digitally?</td>
<td>Faculty/Students</td>
</tr>
<tr>
<td></td>
<td>Where do you store this content?</td>
<td>Faculty/Students</td>
</tr>
<tr>
<td></td>
<td>• on my PC</td>
<td></td>
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<tr>
<td></td>
<td>• on the web</td>
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<td></td>
<td>• mobile device</td>
<td></td>
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<tr>
<td></td>
<td>• USB, external HD</td>
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</tr>
<tr>
<td></td>
<td>• Other:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What items you are interested to have online?</td>
<td>Faculty/Students</td>
</tr>
<tr>
<td></td>
<td>• Course Activities</td>
<td></td>
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<td></td>
<td>• Projects</td>
<td></td>
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<tr>
<td></td>
<td>• Assignments</td>
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<tr>
<td></td>
<td>• Presentations</td>
<td></td>
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<tr>
<td></td>
<td>• Reflective journals</td>
<td></td>
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<tr>
<td></td>
<td>• Videos</td>
<td></td>
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<td></td>
<td>• Pictures</td>
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<tr>
<td></td>
<td>• Reflective journals</td>
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<td></td>
<td>• Personal goals</td>
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<td>• Skills</td>
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<td></td>
<td>• Community services</td>
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<td></td>
<td>• Awards and Certificates</td>
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<tr>
<td></td>
<td>• Other:</td>
<td></td>
</tr>
<tr>
<td>TAM factor</td>
<td>Questions</td>
<td>Participant</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Perceived Usability of e-portfolios</td>
<td>What do you think e-portfolios can be used for, check all</td>
<td>Faculties</td>
</tr>
<tr>
<td></td>
<td>- Reflective practice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Students learning</td>
<td></td>
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<tr>
<td></td>
<td>- Assessments</td>
<td></td>
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<tr>
<td></td>
<td>- Graduate career show case</td>
<td></td>
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<td></td>
<td>- Accreditation</td>
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<td></td>
<td>- Continuous professional development</td>
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<tr>
<td></td>
<td>- Evidence of teaching practice</td>
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<td></td>
<td>- Employment promotions</td>
<td></td>
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<td></td>
<td>- Performance rereview evidence</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Other:</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>1 Strongly disagree ---- 5 Strongly Agree</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- I think e-portfolios enable tracking students’ development</td>
<td>Faculties</td>
</tr>
<tr>
<td></td>
<td>- I think e-portfolios can identify students’ weakness and strength</td>
<td>Faculties</td>
</tr>
<tr>
<td></td>
<td>- I think e-portfolio can be an effective assessment tool</td>
<td>Faculties</td>
</tr>
<tr>
<td></td>
<td>- I think e-portfolio can be an effective accreditation tool</td>
<td>Faculties</td>
</tr>
<tr>
<td></td>
<td>- I think e-portfolio can enable students find jobs</td>
<td>Faculties</td>
</tr>
<tr>
<td>Attitude toward usage</td>
<td><strong>1 Strongly disagree ---- 5 Strongly Agree</strong></td>
<td>Faculty/Students</td>
</tr>
<tr>
<td></td>
<td>- I believe e-portfolios sounds like a great idea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- I wish UBT adopts e-portfolios</td>
<td></td>
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<tr>
<td></td>
<td>- I intend to use e-portfolios if the college</td>
<td></td>
</tr>
<tr>
<td>Intention to use</td>
<td><strong>1 Strongly disagree ---- 5 Strongly Agree</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- I am willing to try a new technology (software) to enhance my learning</td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>- I want to be a more effective and independent learner</td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>- I want to keep track of my learning experience</td>
<td>Student</td>
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<tr>
<td></td>
<td>- I want to demonstrate my learning to others</td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>- I want to be able to reflect on my learning</td>
<td>Student</td>
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<tr>
<td></td>
<td>- I want a place to store examples of my course work</td>
<td>Faculty/Student</td>
</tr>
<tr>
<td></td>
<td>- I want the records of my work to be available online</td>
<td>Faculty/Student</td>
</tr>
<tr>
<td></td>
<td>- I want to be able to easily transport my course work</td>
<td>Faculty/Student</td>
</tr>
<tr>
<td></td>
<td>- I want easy storage of my course work</td>
<td>Faculty/Student</td>
</tr>
<tr>
<td></td>
<td>- I want to be able to add digital content as videos, pictures, electronic files to my online portfolio</td>
<td>Faculty/Student</td>
</tr>
</tbody>
</table>
Table 9. (cont.) Survey questions

<table>
<thead>
<tr>
<th>TAM factor</th>
<th>Questions</th>
<th>Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intention to use</td>
<td>• I want to share my e-portfolio with future employers</td>
<td>Faculty/Student</td>
</tr>
<tr>
<td></td>
<td>• I want to share my e-portfolio with peers, students and university admin</td>
<td>Student</td>
</tr>
<tr>
<td></td>
<td>• I am willing to try a new technology (software) for students' assessments.</td>
<td>Faculties</td>
</tr>
<tr>
<td></td>
<td>Have you created e-portfolio in the past? What did you use?</td>
<td>Faculties</td>
</tr>
<tr>
<td></td>
<td>• No, I have not</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Yes, I used Google Docs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Yes, I used OneNote</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Yes, I used WordPress</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Other:</td>
<td>Faculties</td>
</tr>
</tbody>
</table>

Table 9. Focus group questions

<table>
<thead>
<tr>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Describe your experience with e-portfolios</td>
</tr>
<tr>
<td>Q2. What advantages do you think e-portfolios have?</td>
</tr>
<tr>
<td>Q3. What disadvantage do you think on e-portfolios?</td>
</tr>
<tr>
<td>Q4. Any other comments?</td>
</tr>
</tbody>
</table>

Table 10. Interview questions

<table>
<thead>
<tr>
<th>Theme</th>
<th>Questions</th>
<th>Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-portfolios Drivers</td>
<td>What do you perceive to be the university's drivers for using technologies in education?</td>
<td>University Management</td>
</tr>
<tr>
<td></td>
<td>What do you think the impact or advantages of e-portfolios are on the students?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What do you think the impact or advantages of e-portfolios are on the faculty staff?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What do you think the impact or advantages of e-portfolios are on the academic professional practice?</td>
<td></td>
</tr>
</tbody>
</table>
Table 11. (cont.) Interview questions

<table>
<thead>
<tr>
<th>Theme</th>
<th>Questions</th>
<th>Interviewee</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-portfolios Drivers</td>
<td>Have new technologies applied recently in the university improved the educational experience in campus?</td>
<td>University Management</td>
</tr>
<tr>
<td></td>
<td>In your opinion, what do you think are the top 3 barriers that would prevent faculties and students from using e-portfolios?</td>
<td>University Management</td>
</tr>
<tr>
<td></td>
<td>In your opinion, what do you think the top 3 enablers are that makes it easy for students and faculties to adopt e-portfolios</td>
<td>University Management</td>
</tr>
<tr>
<td>Support &amp; Training</td>
<td>How do you think the university should support faculties and students to adopt technology?</td>
<td>University Management</td>
</tr>
<tr>
<td></td>
<td>Is the university’s infrastructure ready to adopt e-portfolios?</td>
<td>University Management</td>
</tr>
<tr>
<td></td>
<td>What are the challenges facing implementing e-portfolios in the university</td>
<td>University Management</td>
</tr>
</tbody>
</table>

Figure 5. E-portfolio sample 1
Figure 6. E-portfolio sample 2

Figure 7. E-portfolio sample 3

Figure 8. E-portfolio sample 4
technology enhanced learning in the MENA region

In recent decades, governments and other influential actors across the MENA region (Middle East and North Africa) have expressed the desire to move from ‘oil-reliant’ to ‘knowledge’ economies, and have invested heavily in education and technology as a consequence. It is this rich context that this special issue aims to explore. The geographical boundaries within which the papers in this issue focus their attention reflect the vast experience and expertise that exists among TEL practitioners in the Middle East and North Africa.

This special issue of the journal Studies in Technology Enhanced Learning is the result of collaboration between the Centre for Technology Enhanced Learning, Lancaster University (UK) and the Centre for Research in Digital Education, the British University in Dubai (UAE). Both centres wish to recognise that ‘technology enhanced learning’ (TEL) is a deeply contextualised phenomenon: socio-culturally, historically and economically.

This special issue therefore focusses very specifically on TEL in the Middle East and North Africa, a region with a rich history of TEL initiatives and connections to the global economy yet with many contextual particularities.

from the editorial