



INTERNATIONAL JOURNAL OF
MODERN EDUCATION
(IJMOE)

www.gaexcellence.com/ijmoe



CROSS-CULTURAL PERSPECTIVES ON DIGITAL COMMUNICATION IN HIGHER EDUCATION: A QUALITATIVE STUDY OF ACADEMIC STAFF IN MALAYSIA AND IRAN

Nor Syafawati Mohd Zuki^{1*}, Muhammad Bazli Mahmood², Gelareh Madani³, Gisoo Madani⁴

¹Department of Language & General Studies, Faculty of Business & Communication, Universiti Malaysia Perlis

 syafawati.zuki@unimap.edu.my

 <https://orcid.org/0009-0008-3715-2469>

²Department of Language & General Studies, Faculty of Business & Communication, Universiti Malaysia Perlis

 bazlimahmood@unimap.edu.my

 <https://orcid.org/0000-0001-7524-1034>

³Faculty of Management, Islamic Azad University Science and Research Branch, Tehran, Iran

 Gelareh@mdn.academy

 <https://orcid.org/0009-0004-1981-6357>

⁴Faculty of Management, Islamic Azad University Science and Research Branch, Tehran, Iran

 Gisoo@mdn.academy

 <https://orcid.org/0009-0009-1397-8431>

*Corresponding Author

Article Info:

Article history:

Received date: 06.07.2026

Revised date: 06.08.2026

Accepted date: 30.08.2026

Published date: 15.09.2026

To cite this document:

Zuki, N. S. M., Mahmood, M. B., Madani, G., & Madani, G. (2026). Cross-Cultural Perspectives on Digital Communication in Higher Education: A Qualitative Study of Academic Staff in Malaysia and Iran. *International Journal*

Abstract:

The rapid evolution of digital technologies has transformed professional communication in higher education, enabling academic staff to collaborate efficiently across departments and geographic boundaries. In Malaysia and Iran, the integration of digital tools such as video conferencing platforms, email systems and collaborative applications has become essential for managing academic and administrative tasks. However, challenges such as digital fatigue, communication overload and gaps in digital competencies have emerged, affecting productivity and staff well-being. This study employs a qualitative research design using semi-structured interviews with four academic professionals from both countries to investigate the experiences, communication skills and coping strategies associated with digital communication. Thematic analysis identified key themes such as communication preferences, digital fatigue, competence disparities and institutional support. The study highlights both shared and divergent challenges and provides practical recommendations for improving digital communication practices in higher education.

of Modern Education, 8(31),
336-350.

DOI: 10.35631/IJMOE.831020

Keyword:

Communication Competence, Digital Communication, Digital
Fatigue, Higher Education



© The authors (2026). This is an Open Access article distributed under the terms of the Creative Commons Attribution (CC BY NC) (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits non-commercial re-use, distribution and reproduction in any medium, provided the original work is properly cited. For commercial re-use, please contact ijmoe@gaexcellence.com.

Introduction

The study of digital communication in academic contexts is still fragmented and often lacks frameworks to guide the study of this process. This lack emphasizes the importance of a stronger and more structured investigation of educators' and staff's use of digital platforms to interact with each other (Strauss et al., 2024). The unique problems inherent in digital communication are asynchronous timing, and limitations on how much non-verbal information can be communicated, meaning that the context within which the communication occurs may be misunderstood and communication may break down. All this complexity means that higher education professionals must learn to message encode and decode in a nuanced way, using digital media (Strauss et al., 2024). While the application of blended learning tools in the universities in ASEAN is in high demand, there is a lack of integrated pedagogical training by the staff, and the use of the tools is often more for administrative purposes than for improving students' higher order thinking skills (Crosling et al., 2021).

Although more digital communication tools are becoming available, they can only be usable if academic staff knows how to incorporate these tools in their work. Some problems that can arise from the increasing use of digital technologies in higher education have been put on the spotlight in recent studies. On the part of academic staff, their reliance on digital platforms means that they have to handle communication in several applications, reply to messages on time and be up to date with new digital technologies. These demands can be particularly difficult if digital communication is tightly coupled to their daily academic activities. For example, Dahabiyeh (2022) found a relationship between technostress and in online teaching and exhaustion among the members of teaching staff. In turn, Zheng et al. (2022) examined the literature on technostress of teachers and identified Technology-related issues related to online academic activities. Collectively, these works suggest that Digital communication should not only be considered in terms of usefulness and value. The uses, needs and institutional context of academic communications also influence the experience of these academic staff with digital

communication. This helps develop an understanding from which to focus on the perception and response of academic staff to digital communication in various institutional contexts.

In the context of increasing digital communication in Higher Education Institutions, academic staff is expected not only to have technical skills, but also other abilities. The skills to control information, function successfully as part of a team, communicate in the right way, communicate across a range of platforms and adjust to an ever-evolving technological landscape are essential in effective digital communication. Therefore, it is necessary to develop skills related to digital communication continuously in order to enhance digital communication practice in HEIs.

Digital competence is now considered a vital skill in the knowledge economy, and the language teachers are encouraged to continuously enhance their digital competence to meet the changing demands of teaching in this economy (Naim & Razak, 2020). Digital communication technologies have become a key component of the academic institution processes, especially since the pandemic. Email, cloud-based tools like Canvas and Blackboard, Zoom and Google Meet have created a new way of interaction in Higher Education around the world. Research by Serdyukov (2017) revealed that digital transformation brings beneficial effects for both the teaching and collaborative processes in higher education but, also requires higher faculty adaptability and ongoing learning. Yet, digital dependence can also create problems, such as 'cognitive overload', technology 'burn-out' and inequalities of digital literacy among faculty (Ng, 2012).

Though several academic and administrative functions have been made easier by the use of digital communication tools, this has also led to an over-reliance on technology, leading to a poorer well-being of staff with a corresponding lower work-life balance. The uncontrolled use of digital platforms can raise job stress and influence a negative consequence on academic staff productivity, as Day et al. (2021) have shown. A clear awareness of the "lived experiences" of academic staff using these tools is important to creating sustainable and facilitating communication. While there has been several research on the use of digital tools in universities and universities (Adekola et al., 2017; Bond et al., 2021), few if any have pursued in-depth qualitative and comparative studies into experiences of digital communications across cultural and institutional contexts to uncover these differences and trends. Specifically, very few studies have been done on comparison between Malaysia and Iran in this aspect. This research focuses on the experiences of academic staff in Malaysia and Iran with digital communication tools. In particular, it covers two key areas: (1) digital communication competence, including patterns of use, confidence and training needs among higher education staff; and (2) digital communication and its effect on well-being of staff, looking at digital fatigue and what causes it and how to manage it.

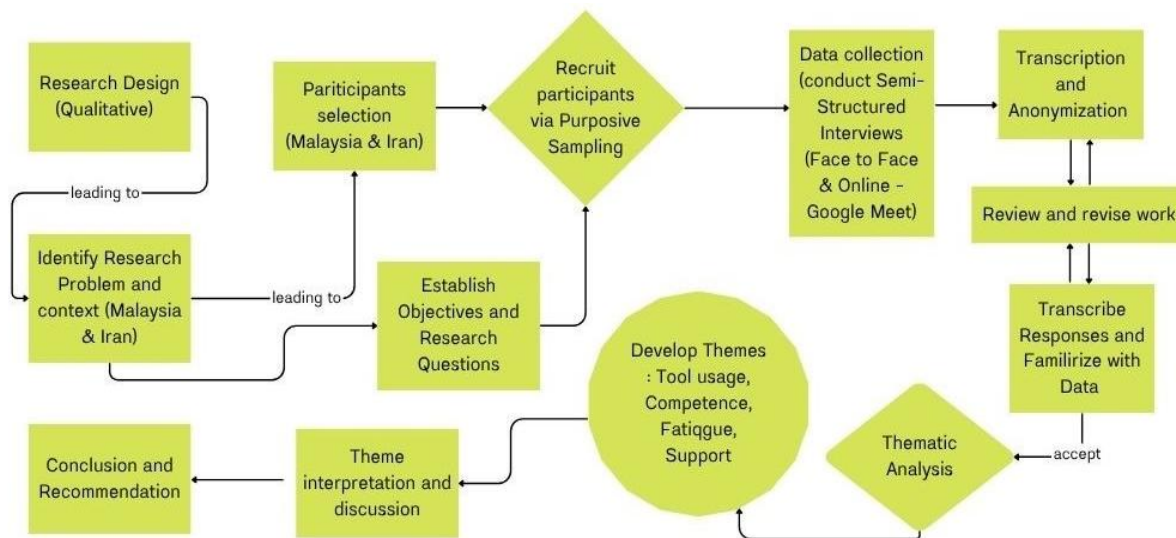


Figure 1: Workflow of the Research Process

Methodology

In this study, a qualitative research method based on the case study approach was used to discover the academic communication practice in Malaysia and Iran (HEIs) for digital communication. The research adopted a semi structured interview and thematic analysis to elicit in depth qualitative account of their usage of digital tools, their competence and experiences of digital fatigue.

This is a qualitative study of an exploratory case study nature in order to gain from the rich contextualised experiences of academic staff.

Using purposive sampling, participants were recruited who have hands on experiences in the application of digital communication in their working practices. The number of the participants in the study was 4 from Malaysia and Iran. As participants included a dean, a senior lecturer, an assistant professor and someone with a good background in professional activities via digital devices. The participants were chosen because they regularly make use of digital communication for communication, exchanging information and other everyday activities.

Having an explorative nature of the study, the sample was not planned to represent the academic staffs in Malaysia or Iran statistically. Instead, purposive sampling was employed in order to select participants as they were likely to be able to offer information that is relevant and detailed in regard to their experiences of digital communication. The sample size in qualitative research is not just based on number of informants, but the number and relevance of the information produced in relation to the research problem. It has been called “information power” by Malterud et al. (2016) and means that a smaller number of the participants may be adequate, if the information that is given fits closer to the purpose of the study. The four informants were intentionally selected for the present study due to their own personal experiences with communicating via digital media rendering population-level representation of the meanings and patterns that surfaced in the accounts of the informants as unfeasible.

The focus of the study was primarily on the digital communication aspects of higher education and working life and the responses of the participants were analysed accordingly. This difference had been taken into consideration during the analysis, in order not to treat the participants as, for example, a totally homogeneous group.

Data Collection

The data was gathered employing a semi-structured interview protocol to introduce the topic of participants use of digital communication tools and their communication practices, followed by digital competence, digital fatigue and institutional support. Two face-to-face interviews were conducted with two participants from Malaysia and two participants from Iran gave a written answer for the same semi-structured questions. The reason for using various data collection forms was because the geographical location of scientists with the participants in Iran, which, if it was face-to-face, would take more time, arrangements and coordination. The written-response format thus proved a suitable way of eliciting the participants' accounts and at the same time fitting the cross-national nature of the study. To ensure consistency as a basis for comparison, the same basic questions were retained for both the formats.

The researchers recognize that the two formats might have been a factor leading to changes in the nature and depth levels of the data. Through face-to-face interviews, researchers are able to interact with the participants, they have the chance to ask the “why” and “how” questions, and they can seek clarification and delve deeper into topics during the interview whereas written responses will be limited (Creswell & Poth, 2018; Kvale & Brinkmann, 2015). Meanwhile, providing written responses may allow for more time to think about what questions start asking and to craft the answers for the participants. This means that the number of elaborations between the two formats may have influenced the quality, richness and depth of individual accounts.

This methodological difference was therefore taken into account for analysis. It was decided that rather than equating the two types of data, meaning, patterns, and issues that emerged across the participants' responses were to be the focus of the analysis. Common core questions across the two formats were key to a common baseline for comparison, with sensitivity to differences as a result of the mode of data collection. The diversity in data collection modalities has been recognised as a methodological drawback as it might have influenced richness and comparability of individual participant accounts.

Data Analysis

The analysis of the data was carried out in a thematic way and followed Braun and Clarke's (2006) approach to thematic analysis. Analysis was carried out by repeatedly reading the interview recordings and interview written responses to get acquainted with the data set. Then, relevant parts of the data were coded based on the issues raised by the participants. The initial codes included references to communication platforms, communication preferences, digital competence, training, digital fatigue, information overload and institutional support.

These initial codes were then analysed and formed into categories based on similar aspects of the accounts from the participants. The responses were then recoded to form preliminary themes, and these were then analyzed with the original responses to assess if they offered a coherent representation of the data. To avoid extending the list of themes too far, these themes

were expanded and renamed based on the key themes expressed in what the participants said. The final analysis resulted in four themes: (1) Tool Usage and Communication Preferences; (2) Digital Competence and Training Gaps; (3) Digital Fatigue and Information Overload; and (4) Institutional Support and Cultural Factors.

As part of the analysis, the variations of the participants in their professional position and the setting with which digital communication was used, were also kept in mind. The issues of Malaysian and Iranian participants were then treated as a contextual comparison, rather than as a direct test of whether or not one nation's culture led to specific communication practices.

Trustworthiness and Reflexivity

A range of measures were taken to increase the strength of the credibility and transparency of the analysis. Researchers kept a systematic process record of coding decisions and development of themes to trace their progression from participant responses to themes in the analysis. The authors' interpretations emerged during the analysis process were explored by going back to the original participant accounts to find out if the interpretations were grounded in the data. There were also many words spoken directly by participants that were preserved in the findings to show the evidential underpinning of the interpretations. The following procedures were followed to ensure that there was a clear link between the participant narratives and the coding process and the themes presented in the study.

Reflexive attention was also discussed in view of data coming from various national contexts. The researchers accounted for institutional and professional differences, and the differences of individual experiences and access and using of digital technologies between Malaysia and Iran; that is, they did not narrowly focus on the difference between the two countries as solely one of national culture. In cross-cultural qualitative research, it is essential for the researcher to pay attention to the process of data collection and interpretation of the object in the cultural and contextual environment in which it exists (Dai, 2023; McDonald et al., 2025). Nationality is therefore not considered as a primary cause of the participants' communication practices, if at all. Rather differences in the participant accounts were interpreted narrowly in the context of these persons professional and institutional situational locations.

Ethical Considerations

The participation of the subjects in the study was entirely voluntary. Participants were blinded to the aim of the study and the use of the data for research before data collection. Learning participants were referred to by their participant code to keep their names anonymous when reporting the findings. The data obtained from the subjects were used only for the purpose of this study, which was kept confidential.

Findings

Thematic analysis revealed four themes focusing on participants' experiences of digital communication: Tool Usage and Communication Preferences; Digital Competence and Training Gaps; Digital Fatigue and Information Overload; and Institutional Support and Cultural Factors. Below are the themes presented using participants accounts to illustrate experiences and meanings found in the data.

The qualitative data was combined to make a word cloud to see what the major topics and language was in all of the interviews (see figure). This visual reflects the most prominent



Figure 2, Word Cloud Representation of Key Concepts

Theme 1: Tool Usage and Communication Preferences

Digital communication was perceived as part of usual working practices, but the platforms and settings differed between the various contexts in which participants worked. One Malaysian academic participant said that he used a wide variety of digital platforms:

“Facebook, Instagram, Twitter, LinkedIn, TikTok, video conferencing via platforms like Zoom, Google Meet and Skype are commonly used.”

The participant's narrative suggests that it involved a broad spectrum of digital communication and was not restricted to one communication channel: social networking, messaging, and video-conferencing.

A faculty member from Iran also identified a number of platforms for professional communication:

“The digital tools I use most frequently for professional communication, in order of usage, are email, messaging apps and video conferencing platforms.”

The same participant mentioned that online meetings were used to stay connected with students and colleagues:

“Currently, I occasionally use online meetings to communicate with students and colleagues.”

Overall, these experiences indicate digital communication was embedded in the practices of the participants. But there were some differences in the particular type of platforms and how they were utilized as well, as the accounts show.

Theme 2: Digital Competence and Training Gaps

Digital competence was described by participants as a continuous process and needs to be learned and adapted to the new needs for digital competence. But there was still room for improvement, said a Malaysian academic delegate:

"I am still in the process of learning and improving my skills in using some digital communication tools. While I am comfortable with basic tools like email and text messaging, I hope to become more confident in using tools like video conferencing or online collaboration platforms in the future."

Still, as suggested in this account, proficiency with some communications systems was not necessarily the same as trust in the larger communications arsenal of systems or platforms in general. The participant mentioned the need for training to improve further development too:

"I have received some formal training on digital communication tools, mainly focused on basic functions like email and video conferencing. While it was useful for getting started, I feel I could benefit from more in-depth training on advanced tools and best practices for online collaboration."

A participant from Iran described a somewhat different approach to maintaining digital competence:

"I always strive to stay updated by studying current trends and identifying effective tools to communicate with students. I then apply these tools to support my teaching and research objectives."

The same subject was asked what types of skills are relevant in times of technological transformation and he/she replied flexibility as ability #2:

"Flexibility is the most important skill that ensures success in times of significant change."

It is therefore suggested in the accounts that digital skills were as much related to attitudes to learning and adaptability in the application of needs for communication as they are related to being technically proficient. Participants experiences show that in addition to the formal training process, participants' initiative in Digital competence development may be overlooked.

Theme 3: Digital Fatigue and Information Overload

The definitions used by the participants about the "digital fatigue concept" were also diverse in nature and encompassed issues such as mental fatigue and concentration disorders, physical fatigue, or fatigue in handling digital devices. One Malaysian academic participant reported:

"Yes, I have experienced digital fatigue at times, especially with constant use of email, video calls and online meetings. The long hours of screen time can be exhausting, and it sometimes leads to mental fatigue or feeling overwhelmed."

The participant also noted that a significant amount of digital communication would affect their ability to work:

“When I spend too much time on digital communication tools, it can become harder to stay focused on tasks and I feel mentally exhausted. This affects my ability to think clearly or be creative.”

The participant described several strategies used to manage these effects:

“To reduce digital fatigue, I ensure I take short breaks every hour to stretch or walk around. I also make it a point to limit my screen time outside of work hours, so I don’t feel constantly ‘on.’”

In addition, an Iranian academic player raised the possibility of effects of high intensity communication via Internet and particularly of giving them considerable information in a short period.

“If, by digital fatigue, we refer to receiving large volumes of information in a short amount of time via digital platforms, then yes — I believe it can disrupt concentration and have negative effects on both productivity and mental well-being.”

But the participant did not mention “digital fatigue” as a problem that is just associated with the time people were spending in front of a screen; a problem of an overload of information and how this impacts peoples' ability to concentrate and be productive was also mentioned. It is therefore inferred from the accounts that "a sense of fatigue" was felt both with the length of the digital experience and in terms of the amount of information that the participants were needed to process.

Theme 4: Institutional Support and Contextual Factors

Institutional support, mostly in the form of facilitation of digital communication competence via training, professional development and organisational actions, was the only one mentioned. A Malaysian academic participant said the need for better guidance was required in respect of what is to be expected in communications online:

“One strategy could be to encourage employees to set boundaries for digital communication, such as avoiding work emails after a certain time.”

The participant also identified training as part of institutional support:

“Another helpful approach would be to provide training on time management and using digital tools efficiently.”

The participant further recommended clearer organisational guidelines:

“To improve digital communication efficiency and reduce digital fatigue, institutions can: 1. Set clear guidelines for when and how to communicate (like using email for formal messages and instant messages for quick ones. 2. Have 'no meeting' days to reduce constant virtual meetings and allow focused work time. 3. Encourage concise communication to avoid long, unnecessary messages.”

The Iranian academic speaker also spoke about the role of university in the development of the capacities of digital communication:

“Universities can support this area by organizing workshops, conferences and even establishing academic programs specifically focused on digital communication.”

The participant also addressed the importance of institutions to be involved in constructing the knowledge in this field:

“Universities can also contribute by guiding research in this field and publishing findings in reputable academic communities, thereby building a strong body of literature around digital communication and competence.”

In each of the accounts, the subject of institutional support was addressed, either as part of professional development, through communication guidelines or by way of organisational initiatives. The findings are based on the responses given by the participants, the institutional support might affect how digital communication used in the system is managed, but currently it is too early to make generalizations about the other institutions in Malaysia and Iran in general.

There was a range in support from the participants' institutional contexts. The Malaysian participant noted the need for better guidelines, training and restrictions within organisations when it comes to digital communication, while the Iranian participant noted the importance of institutional investment in public awareness, professional development and research. The distinctions might emanate from different institutional and professional experiences the participants have had. However, with its limited number of participants from each country the result cannot conclude if the difference is due to national culture or to other factors including institutional practices, occupational roles, individual experiences or the use of technology (Malterud et al., 2016). So, rather than being an explanation of the participants' communication practices, national culture is only a potential contextual factor to consider.

Data Saturation

Thematic analysis conducted in this study showed data saturation in each of the four themes. The number of the participants was not large, but the interviews yielded rich and repetitive data which covered the research objectives. The four particular individuals that participated in the interviews did not provide any markedly different perspectives with the third interview resulting in no new codes or categories.

On Theme 1: Tool Usage and Communication Preferences, a repeated pattern emerged, with email, WhatsApp and Google Meet being the key platforms mentioned, as well as regular findings about the ease of use, institutional needs and preferences, and local preferences. For Theme 2: Digital Competence and Training Gaps, everybody stated the same problems, including lack of opportunities for training in terms of consistency, disparity of having been exposed or not, regardless of age and reliance on self-directed learning.

Theme 3 was Digital Fatigue and Information Overload, where people spoke about burning out and the strain on their eyes and of constant message notifications for which no major differences were observed with regard to the cause and coping. Similarly, Theme 4:

Institutional Support and Cultural Factors brought out institutional beliefs in imaginations of expectations, and infrequent training for competence, as well as cultural practices and norms influencing communication habits.

Purposeful sampling of senior academics from Malaysia and Iran, with rich experience in digital communication meant that participants provided pertinent, contextually nuanced and rich descriptions based on their experience. This is a justifiable small sample size saturation as participants are very relevant to the research question and have very in-depth experience of the researched phenomenon as per Guest, Bunce & Johnson (2006).

Table 1 below presents the thematic analyses conclusions and indicates the similarities and different findings across the culture to offer a clearer overview of the cross-cultural finding. The illustration shows how the institutional practices, the communication preference, digital competence, and organisational support impact the participants' experiences in both HE contexts.

Table 1, Summary of Themes Identified in the Participant Accounts

Theme	Malaysia	Iran	Key Insight
Tool Usage and Communication Preferences	Greater reliance on institutional platforms such as email, Telegram and WhatsApp for official communication	Greater flexibility in selecting communication platforms according to individual preferences	Institutional culture influences communication practices.
Digital Competence and Training	Greater dependence on institutional CPD programmes	Greater emphasis on self-directed learning	Continuous professional development remains essential in both contexts.
Digital Fatigue and Information Overload	Frequent communication overload and pressure for immediate responses	Similar experiences of cognitive fatigue despite positive attitudes towards technology	Excessive digital communication may affect staff well-being.
Institutional Support and Cultural Factors	More structured institutional expectations	Greater individual autonomy in technology adoption	Organisational culture shapes digital communication behaviours.

While there were similarities, the varied experiences of both countries' participants in the adoption of digital communication technologies, as presented in Table 1, there were also differences in communication practices, approaches and professional development and institutional supports. Based on these findings, this discussion deepens on the impact of cultural and organisational contexts on digital communication in higher education.

Discussion

The findings reveal the use of digital communication in the working lives of academic staff in Malaysia and Iran has become mainstream. The importance of efficient communication and flexibility with the use of the digital technologies was appreciated, but also the challenges associated with communication overload and the need for continuous accessibility and a state of constant “onliness” leading to digital fatigue. Global findings from this are that success in communicating through digital technologies is not necessarily found where they can be used but is dependent on having a combination of comfort in using the technology, a comfortable style of communication along with organisational support.

Besides, within-participants difference is discerned between the Malaysian group and the Iranian group, however, reflecting again the effect of cultural and institutional context on the communication behaviour. Overall, communication as designed by Malaysian participants was done through institutional processes and official communication channels whereas Iranian participants saw more flexibility and individual choices, when picking digital communication tools. The results confirm earlier studies which indicate that local institutional expectations as well as organisational culture, affect communication practices.

One of the outcomes is that digital competence cannot be viewed as a technical skill, but rather as an ongoing professional competence. Effective communication through digital means was always recognised as continuous learning and institutional learning and experience. In response, universities have a need to enhance and update both the quantity and quality of professional development opportunities in order to build up technological competencies and professional/communicative approaches with digital media which are gradually emerging as part of the increasing requirements of the digital working environment for universities academics.

The findings of this study contribute to the literature on digital fatigue as well as on communication by offering a comparative analysis between Southeast Asian and the Middle East. This focus on self-directed learning in Iran is different from Malaysia, in that the system requires more formal means of training. This was found to be similar to the earlier works of Margaryan et al. (2011) who suggested the combination between institutional provision and individual digital effort. Psychological sustainability and technological advancement will be a perfect mushroom combination to maximize academic spaces.

Conclusion

Comparative knowledge of the digital communication experiences in Malaysian & Iranian Higher Education contexts. The findings reported varied experiences of digital fatigue, level of institutional support, competency gaps and preferences for tools used. While digital tools can help to make people more productive, they can also lead to burnout and an imbalanced communication scenario if they are not supervised.

Negative features of the database are the limited sample and that the data is self-reported, not fully representative of the institutional dynamics.

Based on these findings, it is recommended that Higher Education Institute must provide Continuous Professional Development Programmes so that they can enhance the competency

digital communication skills and technical skills related to digital. Institutions should also have clear communication procedures, reduce communication and resulting in a healthier digital working environment. Moving forward, it is suggested that larger and more diverse samples, such as multiple higher education institutions and a wider range of cultures be included so as to gain a more cross-cultural perspective of digital communication in education.

Acknowledgements: The authors would like to express their sincere gratitude to Universiti Malaysia Perlis and Islamic Azad University Science and Research Branch, Tehran, Iran for providing the necessary resources and support throughout the course of this research. Special appreciation is extended to colleagues and peers who contributed valuable insights and constructive feedback, which greatly enhanced the quality of this paper.

Funding Statement: No Funding

Conflict of Interest Statement: The authors declare that there is no conflict of interest regarding the publication of this paper. All authors have contributed to this work and approved the final version of the manuscript for submission to the International Journal of Modern Education (IJMOE).

Ethics Statement: This study involved human participants and was conducted in accordance with established principles of research ethics. Participation was voluntary and informed consent was obtained from all participants prior to data collection. Participants were informed about the purpose of the study and their right to participate voluntarily. Confidentiality and anonymity were maintained throughout the research process and the data collected were used solely for academic and research purposes.

Author Contribution Statement: All authors contributed significantly to the development of this manuscript. Nor Syafawati Mohd Zuki was responsible for the conceptualization, methodology and overall supervision of the study. Muhammad Bazli Mahmood handled data collection, analysis and interpretation of results. Gelareh Madani and Gisoo Madani contributed to the literature review, drafting and critical revision of the manuscript. All authors read and approved the final version of the manuscript prior to submission.

References

- Adekola, J., Dale, V. H. M., & Gardiner, K. (2017). Development of an institutional framework to guide transitions into enhanced blended learning in higher education. *Research in Learning Technology*, 25. <https://doi.org/10.25304/rlt.v25.1973>
- Alghamdi, A. K. H., & Aldossari, H. S. (2020). Faculty's perceptions of using WhatsApp in academic advising. *Education and Information Technologies*, 25(2), 1019–1032. <https://doi.org/10.1007/s10639-019-10009-6>
- Alghamdi, E. A., & Aldossari, R. M. (2020). Digital communication trends in Saudi higher education. *Education and Information Technologies*, 25(6), 4787–4802.
- Bond, M., Zawacki-Richter, O., & Nichols, M. (2021). Revisiting five decades of educational technology research: A content and authorship analysis of the British Journal of Educational Technology. *British Journal of Educational Technology*, 52(1), 162–176. <https://doi.org/10.1111/bjet.13030>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Crosling, G., Heagney, M., & Thomas, L. (2021). A study of the use of blended learning/online learning tools in a higher education institution in an ASEAN country. *Journal of Educators Online*, 18(2), 22–37.
- Dahabiyeh, L., Najjar, M. S., & Wang, G. (2022). Online teaching during COVID-19 crisis: The role of technostress and emotional dissonance on online teaching exhaustion and teaching staff productivity. *International Journal of Information and Learning Technology*, 39(2), 97–121. <https://doi.org/10.1108/IJILT-09-2021-0147>
- Day, A., Scott, N., & Kelloway, E. K. (2021). Information and communication technology: Implications for job stress and employee well-being. *Current Opinion in Psychology*, 38, 30–35. <https://doi.org/10.1016/j.copsyc.2020.07.004>
- Derks, D., & Bakker, A. B. (2014). Smartphone use, work–home interference and burnout: A diary study on the role of recovery. *Applied Psychology*, 63(3), 411–440. <https://doi.org/10.1111/j.1464-0597.2012.00530.x>
- DiCicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, 40(4), 314–321. <https://doi.org/10.1111/j.1365-2929.2006.02418.x>
- Fatima, N., & Qureshi, S. (2022). Digital fatigue in academia: A systematic review. *Journal of Educational Technology*, 18(3), 45–59.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*, 2(1), Article 8. <https://doi.org/10.9707/2307-0919.1014>
- Lane, J. N., Leonardi, P. M., Contractor, N. S., & DeChurch, L. A. (2024). Teams in the digital workplace: Technology's role for communication, collaboration and performance. *Small Group Research*, 55(1), 139–183. <https://doi.org/10.1177/10464964231200015>
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage Publications.
- Margaryan, A., Littlejohn, A., & Vojt, G. (2011). Are digital natives a myth or reality? University students' use of digital technologies. *Computers & Education*, 56(2), 429–440. <https://doi.org/10.1016/j.compedu.2010.09.004>
- Menzies, R., & Zarb, M. (2020). Professional communication tools in higher education: A case study in implementing Slack in the curriculum. *International Journal of Educational Technology in Higher Education*, 17(1), 1–17.

- Naim, S. M. (2023). The practice of pedagogical digital competence among ESL lecturers. *International Journal of Academic Research in Business and Social Sciences*, 13(2), 154-172.
- Naim, S. M., & Razak, N. A. (2020). Effect of personal and professional characteristics towards ESL lecturers' digital competence. *International Journal of Advanced Science and Technology*, 29(4), 1029–1049.
- Naim, S. M., & Razak, N. A. (2020). ESL lecturers' digital competence in Malaysian higher education institutions. *International Journal of Future Generation Communication and Networking*, 13(2), 415–425.
- Ng, W. (2012). Can we teach digital natives' digital literacy? *Computers & Education*, 59(3), 1065–1078. <https://doi.org/10.1016/j.compedu.2012.04.016>
- Redecker, C., & Punie, Y. (2017). European framework for the digital competence of educators: DigCompEdu. Publications Office of the European Union. <https://doi.org/10.2760/159770>
- Serdyukov, P. (2017). Innovation in education: What works, what doesn't and what to do about it? *Journal of Research in Innovative Teaching & Learning*, 10(1), 4–33. <https://doi.org/10.1108/JRIT-10-2016-0007>
- Spataro, J. J., & Bloch, J. (2018). Overwhelmed by digital communication? Here's what to do. *Harvard Business Review*. <https://hbr.org/2018/06/overwhelmed-by-digital-communication-heres-what-to-do>
- Strauss, C., Harr, M. D., & Pieper, T. M. (2025). Analyzing digital communication: A comprehensive literature review. *Management Review Quarterly*, 75, 3119–3157. <https://doi.org/10.1007/s11301-024-00455-8>
- Tondeur, J., Scherer, R., Siddiq, F., & Baran, E. (2017). A comprehensive framework for teacher professional development: The importance of teacher beliefs and attitudes. *Educational Technology Research and Development*, 65(4), 879–900. <https://doi.org/10.1007/s11423-016-9481-2>
- Yazan, B. (2015). Three approaches to case study methods in education: Yin, Merriam and Stake. *The Qualitative Report*, 20(2), 134–152. <https://doi.org/10.46743/2160-3715/2015.2102>
- Zheng, M., Asif, M., Tufail, M. S., Naseer, S., Khokhar, S. G., Chen, X., & Naveed, R. T. (2022). COVID academic pandemic: Techno stress faced by teaching staff for online academic activities. *Frontiers in Psychology*, 13, 895371. <https://doi.org/10.3389/fpsyg.2022.895371>