Malaysian Higher Education Instructors' Willingness to Use or Not Use Mobile Instant Messaging (MIM) Applications: A Constructivist Grounded Theory (CGT) Approach

Serena Leow, BA, MA

November 2022

This thesis is submitted for the degree of Doctor of Philosophy

Department of Educational Research

Lancaster University

UK

Abstract

The pervasive nature of mobile devices, particularly mobile instant messaging (MIM) applications or services in mobile telephones, has changed some instructors' pedagogical methods as well as their professional and personal lives. The lack of understanding on instructors' perspectives towards the adoption and adaptation of using MIM applications with students warrants further research. The aim of this study is to: (1) understand how cultural, political, technical and learning activity factors affect instructors' willingness to adopt the use of MIM applications with students after office hours; and (2) examine instructors' adaptation towards using or not using MIM applications with students after office hours through the political, cultural, technical and learning activities perspectives. This study takes evidence from higher education institution (HEI) instructors in Malaysia and adopts a qualitative constructivist grounded theory (CGT) approach by conducting 20 in-depth interviews with participants. Findings of this study inform each factor's contribution towards influencing participants' willingness to adopt and adapt to using or not using MIM applications with students, particularly after office hours. Results in this study revealed 3 categories of instructors: Willing; Unwilling in principle, used in practice; and Unwilling. The cultural, political and learning activity factors were more prevalent in influencing participants' willingness to adopt and adapt to using or not using MIM applications with students. Findings of this study contribute to research by: (1) identifying a framework that eliminates the technical factor but replaces the technical factor with the learning activity factor, as this influences instructors' willingness to adopt and adapt to change; and (2) proposing a quantitative survey instrument to measure and identify factors that can potentially influence instructors' willingness to adopt and adapt to using or not using MIM applications with students in their profession. Limitations, future implications and recommendations are discussed in the final chapter of this study.

Table of Contents

List of Figures

List of Tables

Appendices

Abbreviations

App – Applications

BI – Behaviour intention

CGT – Constructivist Grounded Theory

GT – Grounded Theory

HE – Higher education

HEIs – Higher educational institutions

ICT – Information communication technologies

MCMC – Malaysian Communications and Multimedia Commission

MIM – Mobile instant messaging

MOE – Ministry of Education

MOHE – Ministry of Higher Education

PEOU – Perceived ease of use

PU – Perceived usefulness

TAM – Technology Acceptance Model

TRA – Theory of Reasoned Action

UTAUT – Unified Theory of Acceptance and Use of Technology

WAAMAS – Willing to Adapt and Adopt MIM Applications Scale

WiFi – Wireless Network Connection

Acknowledgements

The completion of this study would not be possible without much support and encouragement of several individuals who are very important in contributing to the success of this thesis. Firstly, I would like to thank my supervisor, Professor Don Passey, for his mentorship and guidance in providing me the support and advice throughout the journey of my study. His wisdom and words of encouragement have motivated me to strive on in overcoming the challenges of completing my thesis on time, despite the pandemic and lockdowns.

Secondly, I would like to thank dad and mom for their support in taking care of my children before, during, and after the COVID-19 pandemic. Your unconditional love and support mean the world to me. To my husband, Dr. Leow Soon-Sen, your love, support and rational advice have always been timely in providing me a clear perspective on situations faced while completing my study. To my brother, Dr. Kenneth Leow, your jokes and sarcastic puns have always relieved me during stressful times. You know I enjoy them! Sedric Leow and Sheldon Leow, both of you are my biggest motivation in cheering me on in this journey! I love you two babies with my whole heart!

Finally, I would like to thank Dr. Catherine Lee, my office mate and confidante for listening to me rant and brainstorming with me throughout my studies. To all my participants, thank you for taking time to participate in this study despite your busy schedules.

Author's declaration:

I declare that this thesis and the work presented in it are my original research and has not been previously submitted to this or any other university for a degree. This thesis is a product of my work in discussion with Professor Don Passey, who is my supervisor.

Word count excluding references: 67,223 words

Chapter 1: Introduction

1.0 Background of the study

University students in today's higher education institutions (HEIs) commonly own mobile technologies that enable them to connect with people at anytime, anywhere. Mobile technologies encompass mobile devices (e.g. tablets, smartphones, and laptops) as well as mobile applications (e.g. Facebook, WhatsApp, Instagram, etc.) that can be downloaded within the mobile device. These mobile applications enable students to communicate and learn at any given place or time, especially using mobile instant messaging (MIM) applications. In this context, mobile learning is driving new educational practices within HE settings and changing instructors' pedagogical methods (Hu, Laxman, & Lee, 2019). However, in order for mobile learning to take place, individuals engaging in learning with the use of mobile devices require Internet connection. As such, many HEIs have resorted in providing free Internet connection for students to use their mobile devices on campus.

In recent years, Malaysian HEIs have seen a trend in tertiary education students' Internet usage for academic purposes, especially during the recent COVID-19 pandemic (Rahim & Rahim, 2021). The Ministry of Higher Education (MOHE) has also encouraged HEIs to prepare an infrastructure that enables students to engage in online learning with the emerging trend of flexible and hybrid contexts of learning in higher education (HE) settings. As such, many HEIs have adopted a free WiFi policy that enables students to connect to the Internet when they are on campus (Malaysia Investment Development Authority, 2021). With the encouragement from the Malaysian government to promote a conducive learning ecosystem, Teow and Zainab (2003) noted that the majority of Malaysian private universities are known to provide computers and Internet access to their students on campus.

Research tells us that students use mobile devices in HE for learning and engaging with peers for collaborative work (Cetinkaya, 2020; Conde, Rodríguez-Sedano, Rodríguez-Lera, Gutiérrez-Fernández, & Guerrero-

Higueras, Sánchez-González, Conde-González, & Castejón-Limas, 2020; le Roux & Parry, 2021; Urien, Erro-Garcés, & Osca, 2019). With the mobility that mobile devices offer, students are able to engage in various e-learning activities (e.g. online discussions, simulation activities, and collaborative work through the use of Google applications) using mobile devices according to their preferred time and place (Cheon, Lee, Crooks, & Song, 2012; Cheung & Vogel, 2013). Besides using mobile devices for education, students also often use mobile devices to socialise with friends and communicate with their instructors concerning academic or personal issues. Close to 93% of the world's population possess Internet access, and the largest group of people using mobile devices are university or college students (Hwang, Chou, & Huang, 2021). Thus, mobile devices have become popular tools for learning in today's HEIs (Kukulska-Hulme, 2012; Pooley, Midgley, & Farley, 2019).

With the existence of new technologies, students are more mobile and resourceful in today's HE learning environment (Haywood, Haywood, Joyce, & Timmis, 2007). Haywood et al. (2007) noted that mechanisms are emerging to support students' learning and 'virtual mobility' at universities (p.13). The most frequent mobile application that students use for communication and networking purposes is MIM applications. The majority of MIM applications such as WhatsApp, Viber, Telegram, and Facebook Messenger are free of charge. MIM applications allow individuals to communicate synchronously or asynchronously. The mobile application enables individuals to type messages, record voice messages, as well as send photo images to contacts. Some researchers (Ogara, Koh, & Prybutok, 2014; Sobaih, Moustafa, Ghandforoush, & Khan, 2016) have classified MIM applications as social media due to its mixed mode of allowing individuals to send asynchronous text and picture messages, as well as connecting individuals with each other synchronously through voice or video calls. In recent years, many research studies have focused on the trend and growth of mobile learning in HE. For example, Hwang and Tsai (2011) identified 154 mobile learning studies dated from the year 2001 to 2010, while Chee, Yahaya, Ibrahim, and Hasan (2017) discovered 144 studies that focused on mobile learning between the years 2010 to 2015. In

addition, Fu and Hwang (2018) also found 90 studies that focused on collaborative learning through mobile technologies between 2007 to 2016. As such, mobile learning has boomed in recent years in tandem with the growing digital native generation who moves into HE (Avram, 2017).

Recent years have seen an increasing integration of new technologies in HE, especially with the use of MIM applications for engaging with students and amongst instructors. Researchers have found mobile technologies to be useful and provide advantages in HE teaching and learning (Almaiah, Alamri, & Al-Rahmi, 2019; Cetinkaya, 2020; Tang & Hew, 2017, 2020; Hwang et al., 2021; Pedro, Barbosa, & Santos, 2018). Furthermore, some studies have noted that mobile technologies, particularly the use of MIM applications, provide support for communities of practice, particularly amongst working professionals such as nurses (Abiodun, Daniels, Pimmer, & Chipps, 2020; Ajuwon, Pimmer, Odetola, Grohbiel, Oluwasola, & Olaleye, 2018). As such, MIM has its benefits in supporting teaching and learning within HE.

On the other hand, some researchers (Aaron & Lipton, 2018; Atabek, 2020; Barkley & Lepp, 2016; Bayless, Clipson, & Wilson, 2013; Heijstra & Rafnsdottir, 2010; Nguyen, 2018; Thomas, O'Bannon, & Bolton, 2013; Tossell, Kortum, & Shepard, 2015) have found the use of mobile technologies to be disruptive within and beyond the classroom environment. Past research studies (Heijstra & Rafnsdottir, 2010; Nguyen, 2018; Thomas et al., 2013) have noted that the use of mobile technologies interferes with instructors' work-life balance due to their constant connectivity during and after office hours, which creates further tension and stress in instructors' lives. Öztok (2017) noted that online spaces allow for one to feel as if he or she is 'being there' despite being physically absent in a social interaction. The function of mobile technologies, specifically MIM applications, enables one to be constantly present due to its asynchronous and synchronous features in responding to messages that one receives. Hence, instructors are in constant negotiation of distinguishing between personal and professional use of MIM applications when such technologies seep into their profession.

Instructors are being pressured to use new technologies to engage with students, provide instructional materials, or share knowledge through such mobile platforms (O'Bannon & Thomas, 2014; Khalid & Abd Samad, 2021; Phan & Sethu, 2021; Stickney, Bento, Aggarwal, & Adlakha, 2019). As a result, it is found that instructors are having to negotiate their personal and professional time, even beyond working hours (Currie & Eveline, 2011; Gant & Kiesler, 2002; Yun, Kettinger, & Lee, 2012). Nevertheless, advantages and disadvantages of using new or mobile technologies have been examined over the years.

The use of MIM applications for learning has increased and is becoming a common practice in HE. Instructors and students perceive MIM applications as an essential communication tool for academic work as well as in their personal lives. Some research studies (Hou, Ndasauka, Jiang, Ye, Wang, & Yang, 2017) have examined students' addiction towards the use of MIM applications, but also found that excessive use of MIM applications among students can lead to improved online social interaction skills, particularly in collaborative academic work (Lauricella & Kay, 2013; Lin, Lin, Liao, & Chen, 2021). Tang and Hew (2017) conducted a review on 39 past research that studied the use of MIM applications in education and found that MIM facilitates students' learning in addition to providing different technological affordances (e.g. temporal, user-friendly, minimal cost, and multi-modality). Similarly, Lin et al. (2021) suggested that HE should adopt mobile technologies in teaching and learning, as the researchers found that students perceived the use of smartphones as playful, easy to use, useful and interesting. Consequently, instructor-student communication has shifted from face-to-face to virtual settings, where mobile devices are used as a form of communication and learning tool due to students' changing culture of learning in HE.

The use of MIM applications for communication has been prevalent amongst students in HEI, particularly when students use MIM applications for group collaborations or just to socialise with each other (as shown by Oliveira, Teixeira, Torres, & Morais, 2021; Hoi & Mu, 2021; Gupta, Khan, & Agarwal, 2021; Sidik & Syafar, 2020; Tang & Hew, 2019; Kim et al., 2019). MIM

applications have been a convenient tool to reach another individual, regardless of time and place. Such convenience has caused instructors to consider the repercussions of reciprocating students' culture of using MIM applications or rejecting the notion of jumping onto the 'bandwagon'. Manca and Ranieri (2016) found that instructors would prefer to use MIM applications, which is considered as a form of social media, for sharing rather than integrating such technologies into their pedagogical practices. Hence, the need to further understand instructors' challenges and perspectives to adopt and adapt to using or not using MIM applications with students is vital.

Literature on MIM applications have shown inconclusive results on the use of MIM applications in teaching and learning, as well as its usage in instructor-student relationships (Ali, Mahomed, Yusof, Khalid, & Afzal, 2019; Cremades, Onieva-López, Maqueda-Cuenca, & Ramírez-Leiton, 2019; Rosenberg & Asterhan, 2018). Past studies (Almaiah et al., 2019; Andujar, 2016; Cetinkaya, 2020; Tang & Hew, 2019) have examined the benefits of MIM applications in affecting students' learning but have failed to address the use of MIM applications from instructors' perspectives. Adopting new technologies into pedagogy requires instructors to adapt to a change that may spill over from their professional to personal times after work, as integrating new technologies into teaching methods requires time to learn. Such instances may cause boundaries of personal versus professional life to be blurred (Bakirtas & Akkas, 2020; Howard, 2013; Nguyen, 2018; Oliveira et al., 2021).

Some researchers (Carisma & Elma, 2020; Cetinkaya, 2020; Cremades et al., 2019; Kümpel, 2021; Tang & Hew, 2019; Urien et al., 2019; Yuan & Wu, 2020) have found MIM applications to be advantageous, whereby students and staff become more engaged and have positive experiences of using MIM applications to connect with others, particularly between students and instructors and *vice versa*. On the other hand, other researchers (Dhir, Kaur, Chen, & Pallesen, 2019; Matimbwa & Anney, 2016; Mohammadi, Sarvestani, & Nouroozi, 2020; Monica, María del Mar, & Julio-César, 2021; Rosenberg & Asterhan, 2018; Sobaih et al., 2016) have found MIM applications to be distracting and lack usefulness in teaching and learning. The inconsistent

findings warrant further understanding on the use of MIM applications in the context of HEIs.

It has been recognised in the literature that teaching and learning with mobile technologies can only be effectively implemented when all agents of change involved in HEIs embrace the adaptation to changes willingly (Corbett & Rossman, 1989). Adaptation towards change requires individuals to accept and embrace various factors that interfere with their everyday routine (Smith, 2015). In HE, the use of mobile technologies such as MIM applications has introduced a new change in students' learning and communication culture. Learning is no longer confined within the four walls but can be a mobile activity that takes place anytime, anywhere. Communication with instructors can take place beyond face-to-face settings and emails (Urien et al., 2019; Xu, 2022). Thus, this change in students' learning and communication culture has pushed instructors to consider adapting to this new culture in HE.

The adoption of mobile technologies in HE teaching and learning involves instructors' attitudes towards the use and function of these new technologies (Hwang et al., 2021). An instructor who chooses to adopt new technologies in teaching will generally have a positive attitude towards the use of these technologies, as well as perceive the integration of new technologies into teaching from a positive viewpoint. Howard (2012) claimed that successful implementation of change by integrating technologies into teaching practices can only take place if instructors have positive affective responses towards the use of technology. In this study, adoption of MIM applications involves an individual's attitude towards the perceived usefulness of the MIM application (Atabek, 2020; Urien et al., 2019). Instructors play an important role should HEIs implement the adoption of new technologies for teaching and learning (Baek, Zhang, & Yun, 2017). However, the rapid change of integrating new technologies into teaching practices has increased instructors' anxiety to adopt such changes, which affects their desire to adapt towards a new culture of teaching (Henderson & Corry, 2021). As such, it is imperative to understand factors that hinder instructors from adopting and adapting towards the changing HE culture in using technologies for teaching and communicating with students.

1.1 The evolving HE context

In Malaysia, the use of mobile technologies for everyday communication is common amongst the younger generation (Abdullah, Mohamed, Abu Bakar, & Satari, 2022; Ismail, Azizan, & Gunasegaran, 2016). Abdullah et al. (2022) found that children in Malaysia, especially in urban areas, are adept at using mobile technologies. The Malaysian Communications and Multimedia Commission (MCMC) (2018) found that more than 98% of mobile telephone users were 15 years old and above. However, primary and secondary school students are limited in using mobile telephones for e-learning and communication liberally, be it within or beyond the classroom setting. On the other hand, students at the university level have more freedom to use mobile telephones for communication and engage in e-learning activities within and beyond the classroom, especially with the existence of MIM applications. Thus, the use of MIM applications are more commonly practiced amongst students in Malaysian HEIs. Albeit the culture of using MIM applications to contact instructors or students is seen as a norm in Malaysian HEIs (Ali et al., 2019; Roslan, Mohd Ayub, & Ghazali, 2020), there is a lack of understanding on how such culture impacts the lives of instructors professionally and personally.

The MOHE in Malaysia has urged HEIs to improve the teaching and delivery system in order to produce graduates who are ready for the revolutionised workplace that adopts technology (MIDA, 2021). The radical change of adopting mobile technologies in recent years has transformed the way students learn at tertiary education, especially with wireless connectivity of the Internet (Badwelan, Drew, & Bahaddad, 2016; Bateman & Palilingan, 2018; Biddix, Chung, & Park, 2015; Pearson & Somekh, 2006). Therefore, the use of mobile telephones is a norm in today's HEIs (Avram, 2017; Kukulska-Hulme, 2012; Tang & Hew, 2017), which concerns instructors due to the limitless boundary in time and context to communicate with students. With various factors that influence the use of MIM amongst instructors in HE contexts, this study focuses on a number of factors (i.e. cultural, political, technical, and learning activity) that affect instructors' willingness to adopt and adapt to using or not using MIM applications with students.

Firstly, the cultural factor examines the norm that exists in HE settings with regards to the use of MIM applications. The culture of communicating with students has evolved from within the classroom to beyond the classroom setting. Elhay and Hershkovitz (2018) noted that a change of communication culture between instructors and students in today's educational setting has extended beyond the classroom environment with the existence of mobile technologies. Out-of-classroom communication in today's educational setting involves the use of MIM applications such as WhatsApp or Facebook Messenger, which is a common practice amongst students (Elhay & Hershkovitz, 2018) considering its affordable cost, mobility and convenience. Past studies (Corbett & Rossman, 1989; Buchanan, Sainter, & Saunders, 2013; Heijstra et al., 2010; Henderson & Corry, 2021) have examined cultural change within educational settings as well as instructors' adaptation towards the change of introducing mobile technologies in pedagogical practices. Researchers (Henderson et al., 2021; Howard, 2013) have found that instructors are reluctant to adopt technologies in their teaching practices due to their negative perception towards the use of technology for work purposes. Therefore, this study refers to cultural change as students' and instructors' adoption as well as adaptation towards the use of MIM applications within the context of HE but not confined within working hours. With the mobility of connecting instructors and students ubiquitously, instructors are faced with the challenge of responding to students' messages constantly, regardless of the time of the day. In this study, the cultural factor examines students' as well as instructors' norm of using MIM applications to communicate beyond the classroom setting, particularly after office hours (Corbett & Rossman, 1989). The cultural factor concerns (1) change in students' learning and communication culture, as well as the use of MIM applications to communicate with peers and instructors, (2) instructors' use of MIM applications in everyday life, and (3) superior or institutional practices of adopting MIM applications for communicating with instructors.

Secondly, the political factor looks into divergent interests amongst several agents of change in HEIs, which include instructors, the HEI

management, and students. In the HE context, agents who influence change involve individuals who are in power (Jarvis, 2018), which include instructors as well as those in management levels of HEIs. Many HEIs in Malaysia have encouraged instructors to adopt the use of mobile technologies in their pedagogical teachings as part of incorporating innovation in teaching. Instructors have also been encouraged to be more engaging with students by using MIM apps, although this is not mandatory in most institutions (Alwi, Mahir, & Ismail, 2014; Cremades et al., 2019; Kim et al., 2019). However, such political pressure from HEIs and superiors may fail to consider instructors' adaptation towards the change of integrating MIM applications into their professional lives. The political aspect that is imposed on instructors by HEIs needs to be examined to better assess instructors' willingness to adopt the use of MIM applications with students within and beyond office hours. In this study, the political factor concerns the power struggles that instructors face with superiors, institutions and students, as well as negotiations that instructors engage in to adapt and adopt or not adapt and adopt the use of MIM applications with students. The divergent interests of using and not using MIM applications between students and instructors lead to power interplay in terms of instructors' and students' intention of choosing to adopt or not adopt the use of MIM applications after office hours (Corbett & Rossman, 1989). Furthermore, the political perspective involves the pressure from the HEI and superior that is imposed on instructors, which may or may not influence instructors' adoption and adaptation towards using MIM applications with students.

Thirdly, the technical factor examines processes and systems involved in integrating MIM applications in HE. According to Corbett and Rossman (1986), technical factors in technology adoption view the "mechanistic approach to improving job effectiveness" (p.3). Benefits and challenges come with the advancement and trend of using new technologies in HE. Researchers (Jia & Hew, 2022; Heller et al., 2021; Schmulian & Coetzee, 2019) have examined the technicalities and features of using MIM in HE to determine its benefits and found that MIM applications provide more interactive social presence in students' learning experiences. Instructors' willingness to adopt MIM in

communicating with students depends on the technical transition of using MIM applications to reach students from traditional face-to-face meetings. Corbett and Rossman (1989) highlighted several aspects within the technical factor of implementing new innovations in educational contexts, which include the quality of innovation, goals, and important resources available to staff, opportunities for discussion and adaptation. In this study, the technical perspective will encompass the use of MIM applications through the systemic and accessibility lens, particularly with the connectivity and technical access to the use of MIM among instructors and students. Examining effects of the technical factor on the use of MIM applications in HEI is important for successful implementation of the application for teaching and learning (Corbett & Rossman, 1989), particularly in aiding instructors on the use of such applications beyond the classroom setting.

Lastly, the learning activity factor focuses on students' learning activities that often take place through the use of MIM applications. Passey (2010) highlighted that learning activities can successfully take place with the use of mobile technologies should agents of change (e.g. instructors, HEI management, and parents) in the wider systemic level embrace the integration of new technologies in HE. The use of MIM goes beyond classroom settings in today's HE learning due to its mobility features, as well as its almost synchronous presence when users appear on these MIM applications (Tseng, Cheng, Yu, Huang, & Teng, 2019). MIM applications can be used to engage in learning activities that are appropriate to support learning even beyond the classroom setting. However, the types of learning activity that can influence instructors to use MIM applications with students need to be identified in conjunction with the cultural, political, and technical factors so that HEIs can cultivate the culture of integrating new technologies in teaching and learning. Furthermore, instructors also need to adapt to using MIM applications for learning activities that take place beyond the formal setting of a classroom should HEIs enforce the integration of new technologies in instructors' pedagogy. Therefore, this study will examine which of the six types of learning activities that are identified by Passey (2010), "review and reflect," "think forward," listen to my explanations," "snap and show," "this is what I've done

and how I've done it," and "tell me how I could improve this". These types of learning activities appear in instructors' pedagogical methods within the classroom but their influence on instructors' willingness to adopt and adapt to using MIM applications for or due to these learning activities need to be understood in a more holistic perspective.

As MIM applications penetrate into HE and change the culture of learning (i.e. instructor-student use of MIM to communicate beyond office hours), instructors' sentiments towards this change need to be assessed. Corbett and Rossman (1989) noted that a school's culture is shaped by agents of change within learning institutions, which can be influenced by external environment or sources. In this study, a change in students' learning culture of adopting mobile technologies can influence instructors' decisions to adopt mobile technologies in their professional lives. Subsequently, instructors need to consider the effects of mobile technologies in their professional as well as personal lives, as the adoption requires instructors to adapt to the use of new technologies. Political pressure from HEIs or superiors may also impact instructors' willingness to integrate new technologies into their pedagogical methods.

In addition, instructors will also need to acquire new knowledge on technical aspects of integrating new technologies into their pedagogical methods, as well as learning activities that are suitable to be used with the adoption of new technologies. Hence, a cultural change in HE teaching and learning affects many aspects of an instructor's professional and personal lives. By understanding each factor's (i.e., cultural, political, technical and learning activity) influence on instructors' willingness to adopt and adapt to using or not using MIM applications with students, HEIs will be able to gauge the effectiveness of integrating MIM into HE and students' learning with the involvement of instructors as one of the agents of change.

For the purpose of this study, the following factors are explored and elaborated here, to describe the focus and scope that are examined within this study:

- Cultural factor – relates to the norms associated with the population in which individuals work in terms of adopting and adapting to using or not using MIM applications.
- Political factor – relates to the divergent interest of external individuals or groups that impact or influence the adoption and adaptation of instructors in using or not using MIM applications.
- Technical factor – relates to the systemic connectivity and accessibility that MIM applications afford.
- Learning activity factor – relates to pedagogical practices through the use of MIM applications, which include a range of activities that involve the use of various functions in MIM applications (i.e. recording voice messages, texting messages or sending images, as well as video and audio calls).

Upon reviewing past literature on change in HE, particularly within the context of adopting and adapting to the use of new technologies that are introduced into the HE context, this study adopts the above definitions to explain how each factor affects instructors' willingness to adopt MIM applications with students. This study also seeks to understand the impact of these factors on their adaptation towards using or not using MIM applications with students.

1.2 Problem statement

With the increasing use of mobile technologies in HE settings (Al-Emran, ElSherif, & Shaalan, 2016; Aaron & Lipton, 2018; Pimmer, Lee, & Mwaikambo, 2018; Yuan & Wu, 2020) and the changing culture of adopting technologies in everyday life (Chung & Mathew, 2020; Currie, 2011; Heijstra & Rafnsdottir, 2010; Phan & Sethu, 2021; Santos, Bocheco, & Habak, 2017), balancing personal versus professional time is becoming a challenge for instructors. The proliferation of MIM into instructors' personal time and space beyond the classroom setting, especially with time and spatial affordances that MIM applications provide, requires further understanding if MIM applications are to be used as a beneficial tool to communicate with students in the HE setting.

The use of mobile technologies, particularly MIM applications, in HE has been rampant in recent years (Kaysi, 2021; le Roux & Parry, 2021; Pimmer, Brühlmann, Odetola, Dipeolu, Oluwasola, Jager, & Ajuwon, 2021; Tamrat, 2021; Tang & Hew, 2022; van Rensburg, Coetzee, & Schmulian, 2022; Yasuda, 2021). While the use of technologies enhances learning experiences and provides convenience for individuals who adopt these technologies, the ubiquity that new technologies (e.g. smartphones, tablets, MIM applications, and laptops) affords can be intrusive towards one's personal life beyond the workplace. MIM allows users to connect with another person in real-time text, which creates an online presence awareness. Individuals who use MIM applications are able to know if the other person whom they are communicating with have read their messages (Wang, Zhang, & Lee, 2021). Even though studies (Andujar, 2020; Ganasegaran, Renganathan, Rashid, & Al-Dubai, 2017; Gronseth & Hebert, 2018; Jia & Hew, 2022; Kim et al., 2019) have proven that MIM is useful in aiding students' learning within the HE context, the lack of understanding towards instructors' sentiments on the use of MIM applications with students warrants further research.

With the evolving culture of adopting MIM in HE, instructors' roles as agents of change should be taken into consideration in order to effectively integrate new technologies into teaching and learning (Passey, 2010). The use of MIM applications can interrupt instructors' professional and personal lives due to the constant social presence that MIM applications provide. Thus, instructors are faced with the dilemma of using or not using MIM applications with students due to their mobility and almost synchronous communication features (Ogara et al., 2014). Excessive use of MIM applications can cause instructors to feel burnt out, especially when students demand immediate responses regardless of the time when students send messages to instructors (Wang, Zhang, & Lee, 2021). Past studies (Tarafdar, Tu, Ragu-Nathan, & Ragu-Nathan, 2007; Salanova, Llorens, & Cifre, 2013; Shin & Jung, 2014) have examined the impact of integrating new technologies into one's profession and found that the stress of learning new technologies, coupled with information overload with the use of new technologies, can cause an individual to feel

burnout on the job. In the context of HE in Malaysia, students' avid use of MIM for communication in HE may hamper instructors' abilities to adapt to using MIM applications for teaching should instructors choose to adopt the technology. By studying instructors' perspectives towards adopting and adapting to using or not using MIM applications with students in their profession, HEIs are able to gauge and implement policies that will encourage student engagement through the use of MIM applications as well as promote a culture of work-life balance amongst instructors who adopt MIM applications with students for communication, teaching and learning purposes. Considering the fact that WhatsApp is a popular MIM application that is widely adopted in Malaysia, this tool could be used to improve student learning as well as student engagement for an enhanced teaching and learning experience within the HE environment.

The recent pandemic crisis has also heightened instructors' tension of juggling between professional and personal time, especially with sudden lockdowns that require instructors to teach from their homes with the use of new technologies (Khalid & Abd Samad, 2021; Krishnamoorthy & Keating, 2021; Oliveira et al., 2021; Tamrat, 2021). The drive to integrate new technologies into pedagogical methods during and post-pandemic crisis has thrown instructors into a frenzy of needing to learn the technicalities of these mobile technologies. Furthermore, instructors were also expected to be responsive via MIM applications during the recent pandemic, which has been shown to have negatively impacted their physical and psychological wellbeing (Halupa & Bollinger, 2020; Nghiem Xuan, 2021; Panisoara et al., 2020). Instructors in HEIs are forced to adapt to the quick changes of MIM use in HE for the sake of student engagement.

Some instructors have lamented on the struggle of balancing professional versus personal time in their teaching profession after working hours (Oliveira et al., 2021). Despite the proliferation of MIM applications in HE, existing research remains inconclusive on the impact of MIM in instructors' professional and personal lives (Rambe & Bere, 2013; Urien et al., 2019; Wang, Fang, Han, & Chen, 2016; Chung & Mathew, 2020; Tang & Hew, 2020).

Furthermore, the lack of attention on the impact of using MIM applications in instructors' work-life balance warrants further understanding (Elhay & Hershkovitz, 2018; Forkosh-Baruch & Hershkovitz, 2017; Zhu & Zhang, 2021).

In Malaysia, the norm of using mobile technologies for teaching and learning is increasing amongst HEIs. Students' culture of using mobile technologies for communication and academic purposes in HE is aligned to their technology readiness (Ismail, Azizan, & Gunasegaran, 2016; Roslan et al., 2020). Researchers (Ismail et al., 2016) noted that students who are ready to use technology in everyday life would also be ready for mobile learning in HE. HE instructors are expected to engage with students more via mobile technologies, as students have begun to use mobile technologies in kindergarten to primary (K-12) education. The trend of using mobile technologies for teaching and learning has slowly seeped into the Malaysian education system (Khalid & Abd Samad, 2021; Shahroom, 2018; Soo, 2018). It is feared that instructors will risk being irrelevant should they refuse to jump onto the bandwagon and learn to integrate mobile technologies into their pedagogical methods. Thus, understanding instructors' sentiments towards adopting MIM applications with students will provide a preview on factors that will influence them to either adopt and adapt or reject the use of MIM applications with students.

WhatsApp is a well-known MIM application that is commonly used by both students and instructors. According to Statista (2022), WhatsApp is the most commonly-used communication application amongst Malaysians. Researchers (Samingin & Zainol, 2022) in Malaysia have studied the use of WhatsApp and its effects on students. They found that WhatsApp is frequently used for student engagement in the educational context in Malaysia. Furthermore, Morsidi, Samah, Rahman, Ashari, Jumaat, and Abdullah (2021) also found that students in Malaysia favoured the use of WhatsApp in the HE context, particularly in communicating with their peers and instructors. The researchers found that students showed positive perceptions towards adopting WhatsApp for learning, as the use of this application enhanced their communication skills. The various functions within WhatsApp (i.e., video and

audio files, voice notes and video calls) help improve students' listening and speaking skills.

Past literature in understanding instructors' use of mobile technologies in Malaysia have pointed towards the unpreparedness and the struggles of instructors in adapting to the change of using mobile technologies for teaching, even though instructors perceive the innovation to be beneficial to students (Ithnin, Sahib, Eng, Sidek, & Harun, 2018; Khalid & Abd Samad, 2021; Maria, Shahbodin, & Pee, 2018; Selamat, Alias, Hikmi, Puteh, & Tapsir, 2017). However, past literature on instructors' sentiments in using MIM applications with students remains understudied. With the increasing use of mobile technologies in HE, the role of instructors in HEIs demands for a new adaptation towards the change of using MIM applications for communicating with students, particularly beyond the classroom setting and after office hours. Students' learning culture demands for a cultural change amongst instructors, especially with the use of MIM applications to support students' learning and engagement. Therefore, this change creates a dilemma for instructors and there is a need to understand instructors' willingness, as well as perspectives in adopting MIM applications with students.

Research (Heijstra & Rafnsdottir, 2010) has shown that the flexibility that mobile technologies provide are increasingly blurring the boundaries for instructors to disengage themselves from work beyond the classroom setting. With the existence of MIM applications, communication can take place synchronously or asynchronously, regardless of time and location (Ogara et al., 2014). The widespread adoption of mobile technologies for learning amongst students means that instructors can no longer refuse to adopt the use of mobile technologies in HE (Briz-Ponce, Pereira, Carvalho, Juanes-Méndez, & García-Peñalvo, 2017; Kukulska-Hulme, 2011; Emanuela Maria, 2017). The challenge to disengage oneself from work and maintain a work-life balance appears to be a common struggle amongst instructors in HE settings due to the nature of the profession (Stickney et al., 2019). However, there is a lack of research in understanding and addressing instructors' struggle of work-life balance with the

existence of MIM applications in HE (Currie & Eveline, 2011; Gant & Kiesler, 2002; Heijstra & Rafnsdottir, 2010; Yun, Kettinger, & Lee, 2012).

Researchers (Cho, Lee, & Kim, 2019; Heijstra & Rafnsdottir, 2010; Nguyen, 2018; Pedro, Barbosa, & Santos, 2018; Sobaih et al., 2016) have found that academicians often juggle between the tension of adopting and not adopting the use of mobile technologies in this digital age. Some instructors experience stress when they are forced to adopt mobile technologies due to information and role overload (Cho, Lee, & Kim, 2019; Nguyen, 2018), while others try to balance their workload and family after office hours with the existence of mobile technologies in their academic jobs (Heijstra & Rafnsdottir, 2010; Bakirta & Akkas, 2020; Howard, 2013; Buchanan et al., 2013; Atabek, 2020; Phan & Sethu, 2021). Some research studies (Bakirta & Akkas, 2020; Chung & Mathew, 2020; Henderson & Corry, 2021) have found that instructors struggle with learning new technologies, which resulted in them rejecting the notion of adopting technologies into their teaching. Such struggles to adopt and adapt to new technologies have cause burnout, or technostress (Brod, 1984), which describes one's disability to adapt to the use of technology in everyday life.

With the rapid change in students' learning culture, instructors cannot deny the integration of new technologies that is seeping into HE, especially using MIM applications to communicate with students concerning academic issues (Bresciani, Griffiths, & Rust, 2009; Tang & Hew, 2017b; Yuan & Wu, 2020). The mobility to support learning in formal or informal contexts has also impacted instructors' pedagogical methods, including their personal and professional lives. Students perceive the use of MIM applications as a norm in their HE learning experiences, especially in using MIM applications to communicate with their peers or instructors beyond the classroom setting (Lee, 2016). However, instructors may perceive this differently and have the need to maintain boundaries in their personal versus professional lives (Brown, 2016). The invasion of MIM applications in instructors' personal time and the need to enact in professional roles beyond their office hours can cause some instructors to resist adapting to the use of MIM applications with students (Cho et al., 2019;

Nguyen, 2018). Such practices of using MIM applications to contact instructors after office hours can impact and affect instructors' personal and professional roles, as well as blur the boundaries of working hours.

The issue of balancing personal and professional lives beyond the classroom setting poses a challenge for instructors with the existing culture of adopting MIM applications for learning amongst students. Furthermore, instructors' sentiments of being forced to adopt and adapt to the change of using MIM applications to communicate with students after office hours have not been widely examined (Cho et al., 2019; Domingo & Garganté, 2016; Pimmer & Rambe, 2018; Sobaih et al., 2016). Even though mobile technologies are commonly examined in academic research, not much attention has been paid on the use of MIM applications in teaching and learning despite its proliferation in HEIs (Pimmer et al., 2019). Various factors can influence instructors' willingness to adopt and adapt to the use of MIM applications. Tichy (1982) noted that cultural, political and technical factors can affect an individual's way of managing change strategically. Identifying the influence of different learning activities through the use of MIM applications will also provide a better understanding on their influences towards instructors' use as well as willingness to adopt and adapt to using or not using MIM applications with students. HEIs or students are not able to effectively adopt and adapt to the change of integrating new technologies into learning if instructors are not on board with designing or engaging in appropriate learning activities through the use of MIM applications (Passey, 2010).

Instructors' perspectives on the use of MIM applications have not been given much attention in past research, as most research has focused on the use of mobile technologies and MIM applications amongst students in terms of their learning and behaviour (Baran, 2014; Heijstra & Rafnsdottir, 2010; Matimbwa & Anney, 2016; Rambe & Bere, 2013; Sobaih et al., 2016; Sung, Chang, & Liu, 2016; Xue & Churchill, 2020). The lack of understanding on instructors' adaptation towards the rapid changes of integrating MIM applications for teaching, as well as adopting MIM applications as a tool for communicating with students, calls for attention, considering that instructors are

also important agents of change within HEIs (Corbett & Rossman, 1989; Passey, 2010). When HEIs gauge the sentiments of instructors on the use of MIM applications for teaching and learning, clearer policies guiding the use of MIM applications can be created, which leads to improved guidelines for students and instructors to engage in the use of MIM applications within and beyond office hours.

Understanding instructors' current sentiments of using MIM applications is imperative, should HEIs be interested in forming new policies that encourage the use of MIM applications in teaching and learning. Findings from this study will provide further educational value in terms of addressing instructors' work-life balance and well-being while they integrate such new technologies (i.e., MIM applications) into their profession, as well as provide HEIs with insights about the current state of instructor adaptation and adoption in the uses of MIM applications for work purposes in order to create policies that will cultivate a culture of work-life balance among instructors in the technology-enhanced ecosystem within HE. Hence, this study seeks to understand instructors' willingness to adopt and adapt to using or not using MIM applications to communicate with students after office hours from the perspectives of cultural, political, technical, and learning activity factors.

1.3 Personal background in the study

The interest to conduct this study stemmed from my personal experience as a practitioner-researcher in HE. As a lecturer at a private HEI in Malaysia, I started my career in the industry (i.e., business and educational consulting, as well as managing business events and conference production) prior to joining academia. My experience of working in the industry enabled me to distinguish between my personal versus professional time and space, particularly beyond office hours. This was not the case when I began my career in academia. Charmaz (2008) stated that qualitative research often begins with topics that affect a researcher's life.

When my career took a change and I moved into HE as an instructor, students began to approach me to request my personal mobile telephone number. They wanted to obtain my personal mobile telephone number so that they could include my contact into their MIM applications (i.e. WhatsApp, WeChat), which are free and convenient for them to reach instructors at any place and any time. I was baffled by the culture of giving personal mobile telephone numbers to students in HE settings, as I deemed personal and professional lives to be distinctly separated from each other.

Upon observing some of my peers who willingly shared their personal mobile telephone numbers with students and responded to students' messages after office hours, I was curious to understand their sentiments on sharing personal mobile telephone numbers with students as well as how they balance their personal versus professional time with students texting them after office hours. Furthermore, I was also curious to understand the perspectives of peers who refused to share their personal mobile telephone numbers with students, as well as adopt and adapt to the use of MIM applications with students. I was aware that my personal bias could affect my data collection and analysis as I embarked on the journey of understanding instructors' perspectives on using MIM applications with students after office hours. Thus, I began to record memos of my reflections while I conducted an initial literature review to understand past empirical research that had been undertaken to understand instructors' adoption and adaptation towards new technologies in HE, as well as throughout the data collection and analysis stages.

The act of recording memos was also continuously upheld throughout each stage of my research (i.e. reviewing literature, data collection, and data analysis, theoretical sampling and sorting) so that my personal bias and experiences will not supersede the findings of my study. Engaging in reflexivity was important to me and was maintained throughout the duration of this thesis, as the act of reflexivity challenged my personal assumptions concerning the use of MIM applications with students in my profession. Charmaz (2008) noted that the act of reflectivity is able to challenge the researcher's 'previously taken-for-granted actions and assumptions' (p.163), which produces emergence in

the process of grounded theory analysis. In addition, my role as a practitioner-researcher enabled me to determine my paradigm in this study, which led to my research design adopting a qualitative study approach (Jarvis, 2018). My involvement in this study also motivated me to question my role as an agent of change, with the power that is invested in me to adopt and adapt to the change of using or not using MIM applications with students in my pedagogical practices.

This thesis marks my understanding of instructors' perspectives towards the cultural, political, technical and learning activity factors that influenced their willingness to adopt and adapt to using or not using MIM applications with students, especially after working hours. In this study, I align my views to the relativist ontological paradigm, whereby knowledge is created and understood by agents who are involved in a particular context where knowledge and understanding of the phenomenon are generated (Charmaz, 2008). Social surroundings can affect agents of change and construct new meaning to the phenomenon, as perception is subjective. As such, this thesis draws from a constructivist grounded theory perspective, whereby I reflect on my involvement in the study as a practitioner-researcher while adopting a comparative and interactive analytical strategy through coding, writing memos, sorting and integrating data into a theoretical analysis. I entertain a range of theoretical possibilities while reviewing past literature. I also reflect on my research practices and principles to engage in openness while data are being studied, analysed and conceptualised through the constructivist grounded theory method, rather than imposing an existing theoretical framework on them (Charmaz, 2008).

1.4 Structure of the document

Subsequent sections of this study will provide an overview of past and existing literature that have examined the adoption of mobile technologies in HE. The literature review will also encompass the functions of MIM applications in HE, as well as the theoretical framework of the Technology Acceptance Model (TAM), which has been examined by past research in the areas of

technology-enhanced learning within HE (Davis, 1989). The literature review section will also highlight individuals' adaptation to change in schools on a wider systemic level from the cultural, political, technical, and learning activity perspectives (Corbett & Rossman, 1986; Corbett & Rossman, 1989; Passey, 2010; Rossman et al., 1984; Rossman et al., 1988). It was essential for me to conduct a literature review in the areas of mobile learning in HE, as well as theoretical frameworks and the notion of change in schools, so that I had an empirical understanding while conducting data analysis through the constructivist grounded theory method. Charmaz (2008) highlighted that 'emergence' is an important element to note while conducting data collection and analysis through the constructivist grounded theory method, as emergence 'presupposes the past, assumes the immediacy of the present, and implies a future' (p.157). Thus, having knowledge about past studies and theoretical frameworks enabled me to identify the empirical gap while exploring shared meanings that participants revealed in the data.

Reviewing past literature and theoretical frameworks within the areas of using mobile technologies for learning and in HE, MIM applications in HE, and theoretical frameworks involving the change of integrating mobile technologies into teaching and learning also contributed to abductive reasoning, as I examined the data. Abductive reasoning allows the researcher to arrive at a plausible interpretation of the data as theoretical accounts are formed through sorting, forming, and interpreting the data to identify anomalies or surprises that may emerge from the data (Charmaz, 2008; Tavory & Timmermans, 2018). Rahmani and Leifels (2018) argued that abductive reasoning focuses on the interplay between knowledge and action that requires the researcher to intervene in the world where the phenomenon occurs rather than merely observing the phenomenon. Thus, reviewing past literature is essential to have background knowledge for analysis.

Upon reviewing past and existing literature in the areas of using mobile technologies for learning, the use of MIM applications in HE, theoretical frameworks and concepts relating to mobile technology adoption in HE and change in schools, an overview on the ontology and epistemology guiding this

study, as well as the research methodology that is used in this study will be provided in Chapter 3. Findings of this study concerning instructors' willingness to adopt and adapt to using or not using MIM applications with students after office hours will be presented in Chapter 4. The final section of this study, which is Chapter 5, will provide a conclusion, with the contribution of this study for education, as well as limitations and future implications of this study concerning instructors' sentiments towards the use of MIM applications in HE, especially in using MIM applications to communicate with students after office hours.

1.5 Summary of Chapter 1

This chapter has provided an overview of the background to this study, it has explained the overall evolving nature of the HE context, including within the Malaysian HE context, and stated the problem that HE instructors are facing with the practice of using MIM applications in HE. The personal background that lead to the intention of conducting this study has also been provided in this chapter. This study seeks to understand instructors' sentiments of adopting and adapting to using or not using MIM applications with students through the constructivist grounded theory lens, as this method requires the researcher to abductively reason and understand emergent empirical findings from the data. The following chapter discusses past and existing literature that provides an empirical understanding in the areas of using mobile technologies for learning, MIM applications and its functions in HE, as well as theoretical and conceptual foundations within the field of technology-enhanced learning.

Chapter 2: Literature Review

2.0 Introduction

The aim of this study is to understand factors that affect instructors' willingness to adopt and adapt to using or not using MIM applications with students, especially after working hours. Understanding participants' construction of the world requires researchers to be attentive towards the patterns that emerge within the field (Tavory & Timmermans, 2018). Tavory and Timmermans (2018) stated that abductive analysis in grounded theory 'relies on a different approach to the relationship among theory, observations, and method' (p.540). Thus, reviewing past literature prior to analysing the data is necessary to anticipate the emergence of theory from the data in a grounded theory approach. Researchers are advised to approach the field with theoretical knowledge and read as much as they can before entering the field and while conducting the research (Tavory & Timmermans, 2018). Charmaz and Thornberg (2021) advised researchers to read theoretical and substantive past literatures on the topic before engaging in the research so that the quality of the analysis would not be compromised. Thus, the following sections display my exploration of past literature and how these literatures inform my study on instructors' willingness to adopt and adapt to using or not using MIM applications with students, especially after office hours.

Past literature in this section was sourced from Lancaster University's One Search database and Google Scholar, which included a range of peer-reviewed journals, scholarly articles, newspaper articles, and reports that have been produced by academic scholars, governments and professional bodies in the community. The search criteria included key terms such as "mobile technologies", "higher education learning", "mobile instant messaging", "WhatsApp", "academia", or "academic learning", "instant messaging", "grounded theory", "constructivist grounded theory", "qualitative research", and terms related to the theoretical framework reviewed in this study (i.e., cultural, political, technical, and learning activities in technology-enhanced learning in

higher education). Other terms related to “change in schools”, “change in organisations”, “adapting to change”, “technological adaptation”, “technological change”, “technostress”, and “work-life balance” were also examined to understand the concept of change and adapting to change in schools or organisational settings. Furthermore, the search criteria also included articles that were only in English, which were peer-reviewed and published between 2010 to 2022.

The following sub-sections (see Figure 1) will provide an overview of past research that has been reviewed, which includes (1) the use of mobile technologies in learning, (2) MIM applications and its functions in HE, (3) past theoretical frameworks and concepts related to change in schools, and (4) gaps in literature reviewed. Literature on the use of mobile technologies in HE (Hamidi & Chavoshi, 2018; Pedro et al., 2018; Pimmer, Mateescu, & Gröhbiel, 2016), its benefits as well as challenges (Al-Emran et al., 2016; Briz-Ponce et al., 2017; Christensen & Knezek, 2017; Tang & Hew, 2017b), MIM applications and its functions in HE (Amry, 2014; Battard & Mangematin, 2013; Bouhnik & Deshen, 2014; Lai, 2016; Pimmer et al., 2018; Pimmer et al., 2021; Santos et al., 2017; Tang & Hew, 2017a; Wasserman & Zwebner, 2017) and on change in schools with the integration of new technologies in pedagogical practices (Corbett & Rossman, 1989; Hsieh & Tsai, 2017; Passey, 2010; Seifert, 2015) will also be discussed in the following sections.

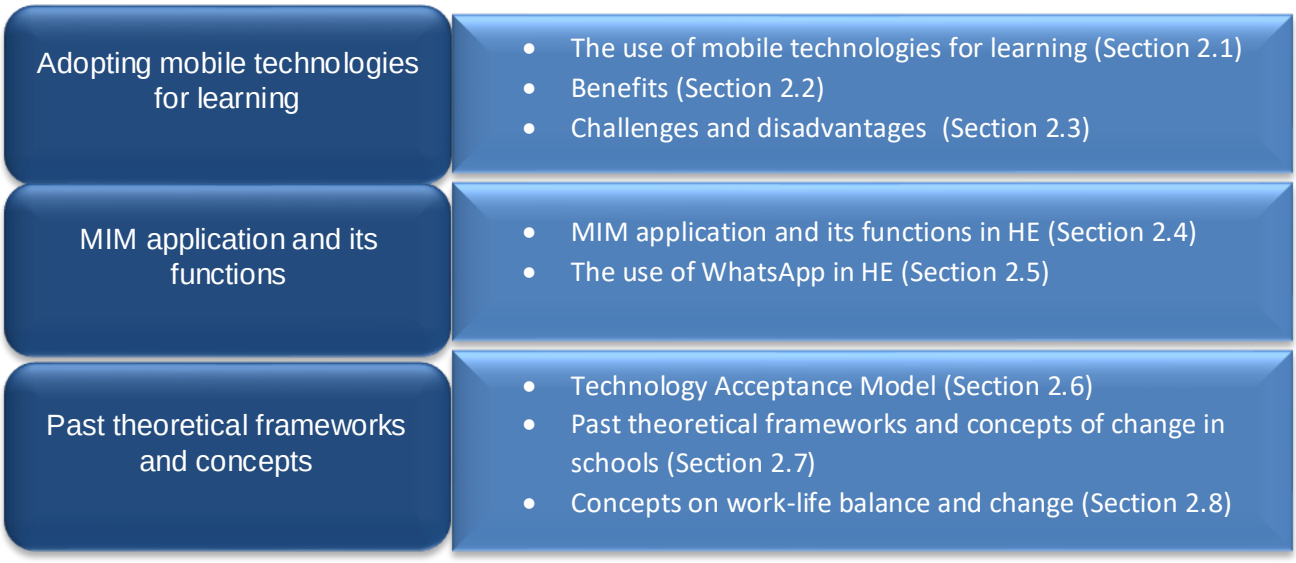


Figure 1: Sections in Literature Review

2.1 The use of mobile technologies for learning

The learning culture in HE has changed in recent years, especially with the recent pandemic crisis that drove many students and instructors to adopt mobile technologies for teaching and learning during lockdowns across different countries (Alturki & Aldraiweesh, 2022; Enyama et al., 2021; Khalid & Abd Samad, 2021; Krishnamoothy & Keating, 2021; Onyema, Eucharia, Akindutire, Daniel, & Kingsley, 2021; Tamrat, 2021). Many HEIs have adopted new technologies (e.g. university ICT platforms or course assessments, cloud platforms for discussions and sharing, and mobile technologies for communication) to enhance students' learning experiences, as well as assist students in their learning. In addition, HEIs have also integrated these new technologies to automate systems in teaching and learning, such as for grading or information-sharing purposes. As such, instructors have been pushed to adopt these technologies that are new to them and change their pedagogical methods to include learning activities that are appropriate for students to engage through the use of mobile technologies.

One of the prominent trends in HE is to use mobile technologies for teaching and learning. Studies between 2003 to 2010 saw a drastic increase in examining the areas of mobile learning and the effectiveness of using mobile technologies for learning (Hung & Zhang, 2012; Wu, Wu, Chen, Kao, Lin, & Huang, 2012). Hung and Zhang (2012) found that the number of mobile learning articles published in 2008 was almost 4 times the amount that was published in 2003. Between 2010 to 2015, research focused on the effectiveness of mobile devices for learning, and smartphones were found to be the most used mobile technology for HE learning (Chee et al., 2017). Research in the past 5 years has seen an increasing focus in examining users' attitudes and intentions of using mobile technologies for learning (Kumar & Chand, 2019). As shown in the past 10 years, research in the areas of mobile learning as well as using mobile technologies for learning has not decreased but evolved to studying students' attitudes, intentions, and perspectives of using mobile technologies in HE.

Mobile technologies can ease communication between students and instructors, as interaction can come in the form of synchronous or asynchronous communication. Indeed, mobile technology has become an essential tool for learning for many due to its popularity amongst students in today's HE environment (Kaliisa, Palmer, & Miller, 2019). Students in today's HEIs are technology 'savvy', whereby self-seeking behaviours such as using mobile technologies to search or verify information are apparent through their use of mobile technologies (Dabbagh & Kitsantas, 2012; Davison & Lazaros, 2015). Students can feel empowered with the use of mobile technologies in HE, as the technology allows them to personalise their data and engage in innovative learning by searching for new information related to course content (Enyama et al., 2021; Gupta et al., 2021).

Peers' use of mobile technologies for learning has further exacerbated the intensity of using mobile technologies amongst students within HEIs. Chua, Rezaei, Gu, Oh, and Jambulingam (2018) stated that students tend to be easily influenced by their peers' usage of mobile technologies for social networking purposes in today's HE setting. Most students find the interactive nature of mobile technologies useful for social networking or collaborative engagement (Brinz-Ponce, Pereira, Carvalho, Juanes-Mendez, & Garcia-Penalvo, 2016). Thus, the culture of using mobile technologies for learning or collaborative work in HE is cultivated from peer pressure (Jaldemark, Hrastinski, Olofsson, & Oberg, 2017).

In lieu of the trend in new technology integration within HEIs, instructors can be expected to adapt to the culture of mobile learning. However, researchers (Atabek, 2020; Bakirta & Akkas, 2020; Chung & Mathew, 2020; Sanchez-Prieto, Huang, Olmos-Miguelanez, Garcia-Penalvo, & Teo, 2019) have found instructors' willingness to adapt to the culture of mobile learning questionable, as most instructors struggle with new technology adoption. Even though mobile technologies have been found to be an effective supplemental tool in promoting positive teaching and learning experiences amongst instructors as well as students (Xue & Churchill, 2020), some instructors perceive the integration of mobile technologies into their pedagogy as disruptive

(Enyama et al., 2021). Integrating new technologies in HE requires both students and instructors to learn the technicalities of the technology, as well as adapt to the culture of adopting these technologies. Thus, some time is required for instructors to learn how to use mobile technologies and integrate their knowledge into forming online content or learning activities for students.

In recent years, HEIs have been scrambling to purchase technologies (e.g. mobile devices, software applications, and mobile learning platforms) and upgrade their facilities in hopes of enhancing students' HE learning experiences (Buabeng-Andoh, 2020; Pooley et al., 2019; Roslan, Mohd Ayub, & Ghazali, 2020; Sidik & Syafar, 2020). The use of mobile devices can enable every individual within the HEI ecosystem to stay connected with each other, regardless of time and location. Research in recent years (Hung & Zhang, 2012; Chee et al., 2017; Chung, Hwang, & Lai, 2019) has seen an increasing emphasis on understanding the cultural norm of using mobile technologies amongst students. The primary group of mobile device users in HEIs are students (according to Buabeng-Andoh, 2020; Saritepeci, Duran, & Ermis, 2019). Instructors and HEI management can be expected to keep up with students' current trends of using mobile technologies for learning, as students enjoy using mobile technologies for learning and socialising with instructors as well as with their social network (Gupta et al., 2021; Qashou, 2020; Sidik & Syafar, 2020). As such, the use of mobile technologies for education has been categorised as an integration between formal and informal forms of learning due to the socialising nature that mobile technologies provide in communicating and connecting with students (Sobaih, Moustafa, Ghandforoush, & Khan, 2016).

Some instructors perceive mobile technologies as a useful social media tool to engage with students (Xue & Churchill, 2020). Other instructors find the informal versus formal learning through the use of mobile technologies to be different, whereby the informal learning stems from students using mobile devices for impromptu collaborations with each other while the formal learning via the use of mobile technologies comes from instructors giving instructions or assigning work to students (Monica et al., 2021). The distinction between what

is formal and informal has been blurred with the use of mobile technologies in HE.

The use of mobile technologies for learning has become a common practice in today's teaching and learning environment, especially within HE (Alghazi, Wong, Kamsin, Yadegaridehkordi, & Shuib, 2020; Chung et al., 2019; Kaliisa et al., 2019). Mobile technologies consist of portable devices such as laptops, smartphones, tablets, personal digital assistants (PDAs), or any handheld devices that provide people the opportunities to learn in formal or informal contexts. Mobile technologies also include software or applications embedded within mobile devices, such as MIM applications (Broadbent & Lodge, 2021). Researchers (Kukulska-Hulme, Sharples, Milrad, Arnedillo-Sánchez, & Vavoula, 2009; Zhang et al., 2021) have found that students commonly use mobile technologies for learning beyond classroom settings, as mobile technologies enable them to share knowledge and engage in collaborative work beyond the classroom setting.

Past studies (Al-Emran et al., 2016; Ali et al., 2019; Alturki & Aldraiweesh, 2022; Dukic, Chiu, & Lo, 2015) have found that students can have a positive attitude towards mobile learning and most students have the intention to continue using mobile technologies for learning due to convenience (Florenthal, 2019; Heflin, Shewmaker, & Nguyen, 2017). Mobile technologies increase students' engagement in learning, particularly in the context in which they are being used (Hamidi & Chavoshi, 2018). The social interactions that take place via mobile technologies allows students to be constantly "present" despite their physical locations. Such social presence sets the expectation for peers or instructors to reciprocate students' constant engagement via mobile technologies (Tang & Hew, 2020). Richardson, Maeda, Lv, and Caskurlu (2017) defined social presence as one's "ability to perceive others in an online environment" (p.1). Researchers (Richardson et al., 2017) have found that social presence is an important aspect that significantly impacts students' satisfaction in the online learning environment. Students who perceive instructors with higher levels of social presence tend to feel closer in their relationship with the instructors.

As a result, instructors can also be expected to be present and engaging in the online world through the use of these mobile technologies, be it within or beyond office hours. However, constant social presence with the use of mobile technologies creates stress due to students' expectations of receiving immediate responses from instructors. Instructors are expected to be immediate in their feedback, as well as being constantly "online" and available for students to reach them. Such expectations for instructors to be constantly available through mobile technologies can create stress, which impacts instructors' wellbeing in the long term.

Researchers (Brod, 1984; Halupa & Bolliger, 2020; Nghiem Xuan, 2021; Salanova et al., 2013; Tarafdar et al., 2007) have identified several factors that contribute towards instructors' fear of adopting mobile technologies as well as challenges in using mobile technologies for teaching. Some of the factors include age (i.e., the older generation being more resistant to change), role overload (i.e., instructors' roles in teaching and facilitating students' use of mobile technologies for learning), complexity of the technology (i.e., the need to learn new technical skills or ways to engage with new technologies), and privacy invasion (i.e., the blurring of boundaries between work and personal life). Instructors' reluctance to adopt and adapt to the use of mobile technologies for teaching can complicate HEIs' goals to integrate new technologies into HE learning, as instructors are important agents of change in this context (Passey, 2010; Corbett & Rossman, 1984).

Many instructors have recently experienced technology fatigue during the pandemic, whereby HEIs expect instructors to learn and adopt new technologies for teaching (Halupa & Bolliger, 2020). Thus, information overload and constant social presence in the online setting can contribute to instructors' experiences of using MIM applications to communicate with students, especially after office hours. Past research has been inconclusive concerning instructors' feedback on the use of mobile technologies. Some researchers (Ishtaiwa, Khaled, & Dukmak, 2015; Tyrer, 2019) found that instructors do not mind using mobile technologies for student or peer engagement and acknowledge the potential of mobile technologies in enhancing students'

learning experiences. On the other hand, other researchers (Aaron & Lipton, 2018; Atabek, 2020; Bayless et al., 2013; Nguyen, 2018; Veletsianos & Kimmons, 2013; Watson, Wilson, Drew, & Thompson, 2016) have found that instructors resent the use of mobile technologies for work purposes. Thus, the following sections will provide an overview of the benefits versus challenges of using mobile technologies for teaching and learning in the HE context.

As indicated by past literatures that examined the use of mobile technologies in HE, mobile technologies are increasingly changing the culture of learning amongst HE students. Learning through mobile devices is becoming a norm in HE settings (Buabeng-Andoh, 2020). With this rapid change of culture in HE learning, instructors are pushed to accept the culture of using mobile technologies for learning. However, instructors' willingness to adopt and adapt towards this cultural change in HE remains questionable. If instructors are important agents of change (Passey, 2010), factors that influence their willingness to adopt to the change, as well as their adaptation towards the change, need to be identified and understood.

2.2 Benefits of adopting mobile technologies in HE

Students' learning culture (i.e., the culture of using mobile technologies for learning) has changed throughout the years, as many students own mobile devices in today's HE settings. Many studies have shown the advantages of using mobile technologies for learning amongst students (Abiodun et al., 2020; Al-Rahmi, Alias, Othman, Marin, & Tur, 2018; Carisma & Elma, 2020; Davison & Lazaros, 2015; Ganasegeran, Renganathan, Rashid, & Al-Dubai, 2017; Hamidi & Chavoshi, 2018; Passey, 2010; Yasuda, 2021). Mobile technologies can assist students in improving their learning and enhancing knowledge creation when they use these technologies to work on group projects or assignments. Students find mobile technologies to be useful in producing learning outcomes such as assignments, collaborate with different individuals as well as develop teamwork (van Rensburg et al., 2022). Furthermore, students generally have a positive attitude and feel satisfied in using mobile technologies for learning within HEIs (as reported by Batmetan & Palilingan,

2018; Briz-Ponce et al., 2017; Tossell et al., 2015). Many students perceive the use of mobile technologies as an essential tool for learning in today's HE setting, as the technology is important in enhancing their experiences in collaborative group work as well as searching for new information via the Internet (Davison & Lazaros, 2015). With mobile technologies, students are able learn ubiquitously at any place and time (Eppard, Hojeiji, Ozdemir-Ayber, Rodjan-Helder, & Baroudi, 2019). Geographical and spatial restrictions no longer exist with the use of mobile technologies in today's society (Garcia Moreno, 2021). Students can enjoy the process of learning with the use of mobile technologies due to the increasing engagement and interaction that the technologies provide (Florenthal, 2019).

The mobility that comes with mobile technologies can enhance students' learning experiences and increased interactivity between students and peers, as well as students and instructors. Gupta et al. (2021) claimed that mobile technologies have also increased education effectiveness, as the innovation negates the constraints of time and place. Mobile technologies have revolutionised learning from being confined in a traditional classroom environment to out-of-classroom settings, whereby research in the use of mobile technologies for collaborative learning are increasingly being examined in unconventional teaching environments (Fu & Hwang, 2018). With a generation of HE students who use mobile technologies in everyday life, many HEIs view mobile technologies as a necessity in today's HE learning environment. Furthermore, students' view mobile technologies for learning positively and enjoy using such technologies to engage with peers and instructors (Kaliisa et al., 2019; Kaufmann & Peil, 2020; Qashou, 2021; Kaysi, 2021).

The use of mobile technologies has enabled students to learn in formal as well as informal contexts. Learning is no longer limited by geographical location with the existence of mobile technologies, to the point that much of it takes place beyond the formal classroom setting (Fu & Hwang, 2018; Gikas & Grant, 2013). Indeed, some students also prefer to use mobile technologies for learning within and beyond the classroom setting (Cetinkaya, 2020; Kim et al.,

2019; Monica et al., 2021; Peponis, Khaliq, Ismail Ali, Bose, Wicks, & Tessema, 2020; Pimmer et al., 2018; Rosenberg & Asterhan, 2018). Students can feel that learning is more personalised, flexible and accessible with the use of mobile technologies (Law, Thome, Lindeman, Jackson, & Lidor, 2018; Sun, Lin, Wu, Zhou, & Luo, 2018). Kaliisa et al. (2019) found that mobile technologies are not only adopted by HE students in developed countries, but also developing countries. However, socio-economical differences between developed and developing countries render disadvantage to students in developing countries in adopting mobile technologies for learning, as the cost of purchasing mobile devices for learning is expensive.

The culture of adopting mobile technologies for learning in HE is further cultivated by students' perceptions towards using mobile technologies to interact with instructors concerning course materials. Students perceive mobile technologies as a tool that decreases their effort in contacting peers or instructors and are willing to invest time as well as money into improving their mobile devices (Qashou, 2021). The enjoyment that comes with using mobile technologies in HE further motivates students to adopt and adapt to using mobile technologies in HE. Researchers (Qashou, 2021; Sidik & Syafar, 2020; Buabeng-Andoh, 2020) have found that students' attitudes influence their intention to continue using mobile technologies for learning. Thus, the trend of using mobile technologies for learning in HE is likely to continue to increase, as students find mobile technologies easy to use and enjoy using them.

Emerging mobile technologies have also changed the way instructors and students communicate with each other. Researchers have found that frequent interaction between instructors and students encourages active learning (Brown, 2016; Davison & Lazaros, 2015). Mobile technologies afford almost instantaneous response and online presence between users (Weidlich & Bastiaens, 2017). Past studies (le Roux & Parry, 2021; Richardson, Maeda, & Caskurlu, 2017; Wang et al., 2016; Weidlich & Bastiaens, 2017) have indicated that students' intention to use mobile technologies for learning and interacting with instructors increases when instructors embrace and are more responsive through the use of mobile technologies. Students feel more engaged and

motivated when they perceive instructors to be available for them to reach out and ask questions.

Previous studies have also shown that social presence is an important aspect to take note of when instructors and students use mobile technologies for teaching and learning (Fryer & Bovee, 2016; Lim & Richardson, 2016; Molinillo, Aguilar-Illescas, Anaya-Sánchez, & Vallespín-Arán, 2018; Wang et al., 2016). Social presence creates a sense of availability, particularly in allowing instructors or students to be present and interact anytime, anywhere. Mobile technologies can afford such online presence for students to interact with peers and instructors for support in HE learning. Besides encouraging active learning, social presence also enhances the feeling of intimacy and emotional engagement between instructors and students. Studies have found that students' learning improves with frequent use of mobile technologies in student-instructor interaction (Han, Min, & Lee, 2015; Molinillo et al., 2018). Furthermore, students perceive instructors to possess mutual understanding and openness should instructors adopt mobile technologies in teaching and learning (Wang et al., 2016).

Students' perceptions on instructors' social presence can enhance students' learning experiences, whereby students feel that instructors are always available to respond to their needs in the learning process (Biddix et al., 2015; Vázquez-Cano, 2014). Mobile technologies can provide the social presence that students desire in their learning experiences. The interaction between students and instructors is further enhanced with the use of mobile technologies that provide synchronous, as well as asynchronous support (Wang et al., 2016). Some researchers (Lim & Richardson, 2016; Öztok, Zingaro, Makos, Brett, & Hewitt, 2015) have perceived such social presence to be beneficial for students' learning. Students can thrive on receiving immediate responses from instructors, especially when they face issues related to academic work, regardless of within or beyond the classroom setting (Biddix et al., 2015; Fryer & Bovee, 2016). Mobile technologies can enhance instructors' social presence amongst students when instructors choose to conform and adopt the innovation with students (Tang & Hew, 2017a).

From the perspective of instructors, mobile technologies can improve teaching processes and work flexibility (Heijstra & Rafnsdottir, 2010; Matimbwa & Anney, 2016). Instructors are able to grade assignments, consult students on academic or personal matters, as well as have flexible working hours with the advancement of mobile technologies in HE. Teaching and learning can take place anytime, anywhere. Instructors can also find it easier and faster to share knowledge with the use of mobile technologies (Matimbwa & Anney, 2016; Sun et al., 2018).

Effective use of mobile technologies in students' learning requires instructors' willingness to adopt and adapt to the change of incorporating such innovation within and beyond the classroom setting. Past studies (Badwelan, Drew, & Bahaddad, 2016; Carisma & Elma, 2020; David & Dumanig, 2017; Gan & Balakrishnan, 2016) that have examined instructors' use of mobile technologies for teaching have highlighted advantages of adopting such innovation. Among the benefits of adopting mobile technologies for teaching is the flexibility of instructors' working hours and mobility to work (Tang & Hew, 2019). Furthermore, instructors have also found the adoption of mobile technologies for teaching to be beneficial in knowledge sharing and creation amongst students (Abiodun et al., 2020; Carisma & Elma, 2020; Genevieve, Arthur, & Dongcheol, 2019; Tang & Bradshaw, 2020). Instructors can perceive the use of mobile technologies in teaching as beneficial as the innovation provides convenience and generates collaborative learning environments (Lai & Smith, 2018).

Studies in the past have indicated that individuals' attitudes significantly impact their intention to continue adopting new technologies that are introduced to them (Azizi & Khatony, 2019; Broadbent & Lodge, 2021; Hwang et al., 2021; Buabeng-Andoh, 2020; Sidik & Syafar, 2020). In this study, should instructors perceive MIM applications to be useful in their professional and personal lives, the likelihood of them adopting the technology will be higher. Montiel, Delgado-Ceballos, de-Mandojana, and Lopez (2019) argued that new technologies help academics adapt to a new generation of students in today's teaching and learning environment. As such, MIM applications can be seen as an effective

tool in helping instructors adapt to a new generation of students if instructors are willing to adopt the technology. However, other factors such as HEI or superiors' pressure, access to the technology, as well as availability to connect through mobile devices may pose as challenges that hinder or deter instructors from adopting MIM applications. Thus, this study's aim is to understand instructors' perspectives on the adoption of MIM applications with students and factors that would influence their willingness to adopt and adapt to using or not using MIM applications with students.

2.3 Challenges and disadvantages in adopting mobile technologies

Mobile technologies have seeped into HE, which is an undeniable culture in today's teaching and learning environment. Despite the many benefits of using mobile technologies for learning, other researchers (Aaron & Lipton, 2018; Berry & Westfall, 2015; Chen & Yan, 2016; Nguyen, 2018; Sobaih et al., 2016; Tossell et al., 2015; Wentworth & Middleton, 2014) have highlighted disadvantages of using mobile technologies for teaching and learning. Mobile technologies provide the convenience of accessing course materials at any time or place, as well as interacting with instructors and peers synchronously or asynchronously. However, mobile technologies also enable users to engage in social interactions and build their social network through online engagements (Veletsianos & Kimmons, 2013). Hwang et al. (2021) noted that the use of mobile technologies for teaching and learning has often placed heavier emphasis on the interactive relationship between instructors and students. As a result, instructors are now expected to learn, adopt, and adapt to using mobile technologies for teaching so that they can match up to the students' changing culture of learning in HE. Furthermore, instructors are also expected to be more sociable and engaging with students in the HE setting as the context caters to adult learning (Kuznekoff, Munz, & Titsworth, 2015).

Studies have also argued that students' academic performances can be negatively impacted with the use of mobile technologies, especially within the classroom setting (Chen & Yan, 2016; Tossell et al., 2015; Wentworth & Middleton, 2014). One of the reasons for the negative impact on students'

academic performances is due to distraction while using mobile technologies. Aaron and Lipton (2018) commented that distraction during lectures are even more prevalent in today's HE with the existence of mobile technologies. Students' behaviours of using mobile technologies in class, particularly texting, can negatively affect their learning as well as academic performance (Kuznekoff et al., 2015).

The use of mobile technologies within and beyond the classroom can be disruptive, especially when students are distracted with tasks at hand within classroom settings. Students tend to multitask while using mobile technologies to learn. Aaron and Lipton (2018) conducted a study on students' levels of distraction with the use of mobile devices in class and found that students who answered questions correctly in class were less likely to be distracted with the use of their mobile devices. Thus, using mobile devices in class while conducting classroom assessments or learning activities can potentially distract students and subsequently impact their academic performances. Such behaviours of using mobile devices during classroom learning activities or assessments may result in deterioration amongst students' academic performances (Cardoso-Leite, Green, & Bavelier, 2015; Chen & Yan, 2016; Junco, 2012; Patterson, 2017; Sana, Weston, & Cepeda, 2013; Subrahmanyam, Michikyan, Clemmons, Carrillo, Uhls, & Greenfield, 2013).

Some researchers (Aaron & Lipton, 2018; Berry & Westfall, 2015) have also noted that mobile technologies can be addictive, particularly with the use of smartphones in HE. Mobile technologies have been said to be a distraction rather than assist students in learning. Tossell et al. (2015) found that students overestimate the value of smartphones in assisting them for learning and realise that mobile technologies can be a distraction in deterring them from paying attention in the learning process. Students who are addicted and engage in multi-tasking when using mobile technologies tend to lose focus from the actual learning process (Cardoso-Leite et al., 2015; Chen & Yan, 2016; Junco, 2012; Schutten, Stokes, & Arnell, 2017). Thus, mobile technologies have also brought about disruption and negative impacts for students in the learning process.

As for instructors, mobile technologies have also been found to disrupt their professional and personal time. Researchers have examined the use of mobile technologies for work and found that instructors can fall into 'technoaddiction', which is when individuals use mobile technologies for work excessively and in an uncontrollable manner (Salanova et al., 2013). Technoaddiction can take over an individual's personal time due to the anxiety that the individual feels with the absence of mobile technologies. Overusing mobile technologies for work can cause fatigue, as technology can blur the boundaries between work and personal lives due to its ubiquity (Nghiem, 2021). In this instance, instructors can fall into the compulsion of constantly creating or revamping course materials that integrates mobile technologies. Indeed, the constant online presence can compel instructors to use mobile technologies to engage with students, which may interrupt their personal lives and blur the boundaries of life from work.

In today's HE setting, students possess different technological skills and are considered digital natives (Janschitz & Penker, 2022) who are eager to learn and generate knowledge with the use of mobile technologies. Individuals between the ages of 18 to 29 years are using mobile technologies increasingly to engage with others (Nguyen, 2018). In addition, students also expect instructors to adopt different learning activities through mobile technologies to enhance their understanding of course materials (Montiel et al., 2020). However, instructors can struggle with learning and adopting mobile technologies into their pedagogical methods (Bakirta & Akkas, 2020). As a result, instructors may require extra time and effort beyond their teaching hours to adopt and adapt to integrating mobile technologies into their pedagogy. Instructors can additionally be expected to upskill their knowledge in integrating mobile technologies into teaching, particularly during the recent pandemic crisis (Atabak, 2020; Bakirta & Akkas, 2020; Chung & Mathew, 2020; Oliveira et al., 2021). The sudden change of adopting mobile technologies into teaching has caused some instructors to feel overwhelmed with the need to adapt and adopt new technologies into their pedagogy. Some instructors have experienced

emotional, physical and psychological stress due to the requirement of creating online content with the use of mobile technologies (Panisoara, 2020).

Brod (1984) labelled the stress of using and adapting to the use of new technologies as ‘technostress’. In this context, instructors feel unequipped in adopting and adapting to the use of mobile technologies, which causes stress. One of the challenges that instructors face is the need to balance personal versus professional time with the use of new technologies, as these new technologies have invaded their personal time and lives. Besides blurring the boundaries of personal versus professional lives, mobile technologies appear to be a challenge for instructors to adopt due to the lack of knowledge and skills amongst instructors. Instructors are unable to match the time that is required to learn the new technology with the given task of teaching and the need to integrate these new technologies into their professional work (Tarafdar et al., 2007). As a result, instructors may feel overwhelmed and experience tension in wanting to be current yet being unable to adapt to the fast pace of learning and integrating mobile technologies on the job.

Atabak (2020) found that more experienced educators perceive the integration of mobile technologies into their teaching as more challenging than younger instructors. Integrating mobile technologies into teaching may require additional time for instructors to learn how to use the technologies, which involves additional tasks beyond their responsibilities of teaching and creating materials for students’ learning on the course. Furthermore, additional technical assistance may be required to ensure a seamless technology integration into courses taught by the instructors. Al-Senaidi, Lin, and Poirot (2009) noted that the lack of institutional support in providing technical training can also be a barrier towards new technology adoption amongst instructors. Additionally, the lack of technical equipment or connectivity can exacerbate instructors’ frustration in learning how to use the technology in addition to adapting to technology integration in their pedagogy (Buchanan et al., 2013).

Besides the negative impact that mobile technologies bring towards learning, researchers have also found that instructors and students who use

mobile technologies for teaching or learning are concerned with the issue of privacy, especially when their privacies are invaded by the other party (Dhir et al., 2019). In this respect, instructors' attitudes and beliefs can be a barrier in successfully implementing mobile technologies for teaching and learning (Mao, 2014). When instructors perceive the use of mobile technologies as a threat to their privacy, their willingness to adopt the technology with students may decrease.

Past studies have mostly focused on students' perspectives rather than instructors' perspectives on the use of mobile technologies in HE. Research in understanding instructors' challenges and barriers in adopting and adapting to the use of mobile technologies have remained scarce (Ajjan & Hartshorne, 2008; Al-Emran et al., 2016; Al-Senaidi et al., 2009; Ishtaiwa et al., 2015). Some literature in the past (Ahad & Lim, 2014; Bresciani et al., 2009; Rambe & Bere, 2013; Veletsianos & Kimmons, 2013) has indicated instructors' struggles to balance the tension of adopting mobile technologies for teaching due to conflicting personal and professional roles. The role of instructors in HEI requires flexibility and engagement with students, which can sometimes impede instructors' personal time (Nguyen, 2018).

The recent crisis of the COVID-19 pandemic has drawn researchers' attention towards instructors' struggles of juggling between personal and professional lives during lockdown periods across different countries (Alturki & Aldraiweesh, 2022; Khalid & Abd Samad, 2021; Onyema et al., 2021). Researchers have noted that the sudden crisis has forced instructors to adapt and adopt the use of mobile technologies for teaching in the informal context of their homes, especially when countries began to impose lockdowns to curb the spread of the coronavirus. Many instructors cited unpreparedness in adopting mobile technologies for teaching due to the lack of training in using such educational innovation (Krishnamoorthy & Keating, 2021; Oliveira et al., 2021). As such, instructors feel burnout and stressed in trying to adapt and cope with the constant change of integrating new technologies for mobile learning.

The COVID-19 pandemic has redefined HE and enforced the digitisation of HE across the globe (according to Krishnamoorthy & Keating, 2021). As mobile technologies allow individuals to be constantly connected and have an online social presence, instructors can struggle to balance between work and personal use of mobile technologies in their lives (Halupa & Bollinger, 2020). Indeed, instructors do not have the option to choose, but have to adapt to the use of mobile technologies despite their lack of knowledge or training. Therefore, addressing the challenges that instructors face in adopting and adapting to the use of mobile technologies is important to improve the quality and future of HE, as well as the seamless integration of new technologies in HEIs.

The use of MIM applications with students requires instructors to adapt and adopt the technology. Thus, the effect of adapting to this change can create stress for instructors due to the lack of temporal boundaries that the technology affords. MIM applications can create constant online social presence (Halupa & Bollinger, 2020) and cause instructors to adapt to the change of responding to students' messages, even beyond office hours. Such 'technostress' blurs the boundaries of professional and personal time beyond working hours (Tarafdar et al., 2007). Hence, this study seeks to examine factors that would influence instructors' adaptation towards using or not using MIM applications with students to better understand their sentiments in the change of using such technology in their profession.

2.4 MIM and its functions in HE

MIM applications have revolutionised communication between students and their peers, as well as with instructors in HE. The mobile application continues to gain popularity amongst students, as some use it for social purposes while others use it for academic purposes (Dhir et al., 2020; Dukic et al., 2015). Instructors are often encouraged to be more engaging with students and HEIs often emphasise on the immediacy of providing feedback or responses towards students' requests in the teaching and learning process (Nguyen, 2018). With the changing trends of engaging in mobile learning,

mobile technologies have enhanced the effects of immediacy in the instructor-student relationship. Mobile technologies have become a popular source of communication for the younger generation, which has changed the teaching and learning culture within HEIs (Tang & Hew, 2022). Nguyen (2018) examined the use of non-educational digital technologies for educational use and found that the culture of teaching and learning in HE involves formal use of informal tools for education. That is, instructors are prone to use mobile technologies that involve social networking sites for educational purposes. Thus, the culture of teaching and learning in today's HE has evolved from traditional chalk and blackboard to using social media and mobile technologies for academic content (Bond, Marin, Dolch, Bedenlier, & Zawacki-Richter, 2018). In this study, the teaching and learning culture encompasses the use of MIM applications as a form of communication, engagement, and learning between students and instructors.

One of the important features of using mobile technologies in teaching and learning concerns uses of MIM applications. MIM has been found to improve interpersonal relationships and intimacy (Tang & Hew, 2022). As such, MIM applications have been used by students to establish social connections, as well as engage with instructors for academic purposes. With the existence of MIM applications within HE, students are able to reach instructors at any time, any place. MIM applications come with a myriad of features that allow individuals to connect and communicate with each other through mobile telephones or smartphones. Individuals can also engage in synchronous, semi-synchronous, or asynchronous communication through MIM applications (Wang et al., 2016). Individuals who use MIM applications on their smartphones or mobile telephones require Internet or telecommunication carriers' connections to transmit messages. Most HEIs in Malaysia provide free Internet access for students to be connected when they are on campus. So, using MIM applications with peers or instructors is a cultural norm amongst students in Malaysian HEIs, in which students use MIM applications for personal or educational purposes (Roslan et al., 2020).

Some of the popular MIM applications that are commonly used amongst students include WhatsApp, Viber, Telegram, and WeChat. These MIM applications are free of charge and can be downloaded into one's mobile devices or smartphones (Gil de Zúñiga, Ardèvol-Abreu, & Casero-Ripollés, 2021). Some of the features that MIM applications offer are the functions to connect with others via voice recorded messages or calls, send text messages or images to convey information, or send emojis and gifs to express one's feelings (Amry, 2014). Researchers (Tang & Hew, 2022) have stated that responding to messages in MIM applications depends on users' convenience and availability to reply. As a result, MIM applications offer a variety of ways for individuals to communicate messages to others at the convenience of the user through smartphones or mobile devices.

Researchers (Abiodun et al., 2020; Andujar, 2020; Broadbent & Lodge, 2021; Conde et al., 2020; Peponis et al., 2020; Yuan & Wu, 2020) have found that MIM applications have been gaining popularity in establishing collaborative or group work amongst students. Furthermore, students can prefer using MIM applications in collaborative learning as the experience is rewarding and enhances students' communication with other team members in the group. MIM applications have also enhanced the relationship between students and peers when students engage in group work with the use of MIM applications. Interactions through the use of MIM applications change from formal to informal, which can strengthen the trust and bond between members within the same chat group (Tseng et al., 2019; Tyrer, 2019).

MIM applications can enhance students' collaborative learning experiences and students find MIM applications useful in their learning process (Roslan et al., 2020). The use of MIM applications can promote collaborative learning and knowledge acquisition among users (Mao, 2014; Pimmer et al., 2021; Yasuda, 2021). The interactive nature that MIM applications afford enhances students' engagement with peers as well as instructors (Tang & Bradshaw, 2020). Students feel more connected with their peers and instructors with the use of MIM applications because of the synchronous effect that this mobile application provides (Cetinkaya, 2020; Peponis et al., 2020). Elhay and

Hershkovitz (2018) found that MIM applications improve instructor-student relationships, especially when used outside the classroom environment. In the study, the researchers (Elhay & Hershkovitz, 2018) noted that instructors find the use of MIM applications to be inappropriate for educational purposes yet continue using the mobile application due to its popularity as a means of communication. Students and instructors have also found MIM applications to be convenient in team work, as they are a form of support for communicating with other team members (Urien et al., 2019). As such, MIM applications are useful and convenient for communication purposes in teaching and learning. However, the need to understand instructors' perspectives on the adoption of MIM applications for communication purposes is imperative in establishing an effective teaching and learning setting for both the instructor and the student.

Even though some researchers (Pimmer et al., 2021; Urien et al., 2019; Yasuda, 2021) have found MIM applications to be beneficial in teaching and learning, especially for students, others have found the use of MIM applications to be detrimental towards instructors' personal and professional lives due to the inability to control the current educational environment of using MIM applications in HEIs (Oliveira et al., 2021; Panisoara et al., 2020; Veletsianos & Kimmons, 2013). MIM applications allow users to know the online presence of the other party, in which senders are able to know if receivers have read their messages. As such, students are able to "track" instructors' online presence and expect immediate responses from instructors upon knowing that their messages have been read and received (Wang et al., 2016; Veletsianos & Kimmons, 2013). Instructors may experience anxiety over students' perceptions of their effectiveness if they fail to respond to messages in MIM applications (Henderson & Corry, 2021). The constant need to adapt to using new technologies can create stress amongst instructors, which results in resistance to adopt the technologies for teaching.

Past literature on the use of MIM applications for teaching has also indicated ineffectiveness of the mobile application for academic delivery (le Roux & Parry, 2021). Students and instructors have found mobile devices to be a barrier in using MIM applications for academic discussions due to the mobile

device's screen size (Joo, Kim, & Kim, 2016). Indeed, Dinsmore (2019) noted that MIM applications have the potential to blur the separation of social from educational in online discussions, as MIM applications can also be perceived as a social media tool. As such, the need to understand instructors' willingness to adopt and adapt to using MIM applications with students is required for policies to be drawn within the HEI context should such technologies be implemented.

2.5 The use of WhatsApp in HE

One of the most widely used MIM applications in HE is WhatsApp (Kaysi, 2021). WhatsApp was founded by Koum and Acton (Ali et al., 2019) and is currently still the world's most used MIM application (Dixon, 2022). Since its inception, WhatsApp has been adopted in both informal and formal contexts, ranging from personal use in homes to professional use in the workplace. This MIM application is most prevalent outside of the United States and is most often used in Asian countries (Ali et al., 2019). WhatsApp has functions that support synchronous and asynchronous social interactions. The application is often limited to contacts within one's social group, such as family members, close friends, and acquaintances. WhatsApp also allows individuals to share files or pictures, and is often considered as a form of social media by some individuals (Malik, Dhir, Kaur, & Johri, 2020).

According to Newman (2017) in the Digital News Report, WhatsApp was reported to be the most commonly used MIM application amongst Malaysians. Students use WhatsApp for academic and non-academic discussions, as it allows users to send real-time messages to individuals or groups at no cost (Ali et al., 2019; Lee, 2016; Raman, Sani, & Kaur, 2014). Thus, the norm of adopting WhatsApp for academic use is accepted by students as well as some instructors in Malaysian HE settings. With the practice of using WhatsApp for academic work and students' autonomy in the ownership of mobile devices, it can be argued that instructors' pedagogical methods call for a paradigm shift. The functions of WhatsApp have allowed teaching and learning to seep from formal to informal contexts (i.e. within and beyond the classroom setting). Instructors can receive messages from students after office hours, which can

be a distraction and unspoken pressure to respond to students' messages beyond official teaching hours.

In Malaysia, the MOE (Ministry of Education) has highlighted the importance of adapting and adopting to the change of innovative pedagogical methods to produce graduates who are ready for the Industry 4.0 workforce (Selamat et al., 2017). Certainly, an instructor's adaptation and response towards technological changes for teaching and learning can affect the effectiveness of students' learning through the use of mobile technologies, as well as the improvement of a school's system to integrate technology into teaching and learning (Corbett & Rossman, 1986; Corbett & Rossman, 1989; Rossman et al., 1984; Rossman et al, 1988). Many HEIs in Malaysia have encouraged instructors to adopt the use of mobile technology for teaching, and to move from traditional classroom learning into mobile learning where instructors and students are not confined within the four walls of a room (Karim, Adnan, Salim, Kamarudin, & Zaidi, 2020). Instructors are also encouraged to be more engaging with students beyond office hours (Khalid & Abd Samad, 2021).

The use of WhatsApp for academic purposes is a norm that is practised by both students and instructors in Malaysian HEIs (Ali et al., 2019). WhatsApp can enhance interpersonal relationships and positively shape interactions within communities of practice (according to Tyrer, 2019). As such, students in Malaysia have favoured the use of WhatsApp over other MIM applications for learning purposes as well as for communicating with their peers or instructors. Morsidi et al. (2021) noted that Malaysian students viewed WhatsApp as a useful tool to improve their listening and speaking skills. Indeed, the MIM application is perceived to be beneficial in enhancing students' communication capabilities. In addition, WhatsApp was also found to enhance student engagement in the Malaysian educational context, but excessive use impacted students' academic performance (Samingin & Zainol, 2022). Considering the wide adoption and culture of using WhatsApp as a communicative and learning tool in Malaysian educational contexts, this study explores instructors' sentiments on the inevitable change within HE contexts, whereby the

integration and interference of WhatsApp into instructors' teaching profession has changed conventional pedagogical methods.

Studies in the past have mostly examined students' experiences of engaging in mobile learning through WhatsApp without considering the instructor's perspectives on engaging in teaching through the integration of mobile technologies (Bere & Rambe, 2016; Ismail et al., 2016; Lee, 2016; Mahmud, Ismail, Sahid, & Yazid, 2007; Mohd, Mohd, & Mohd, 2008; Tasir & Lim, 2011). In line with the Malaysian government's aspiration of producing technology 'savvy' graduates to meet the Industry 4.0 needs (Selamat et al., 2017), understanding instructors' attitudes towards the change of adopting and adapting to the use of mobile technologies (i.e. MIM applications) as well as factors that will encourage instructors to re-think and integrate new technologies into their pedagogical methods are vital. Such understanding may benefit HEIs or policymakers in producing industry-ready graduates according to the nation's focus to drive innovation in the evolving Industry 4.0.

Even though WhatsApp provides instant access to reach another person, some academics are still hesitant to use WhatsApp across the HEI setting. A study by Ali et al. (2019) found that academics in Malaysia prefer using WhatsApp with peers and subordinates, but not with superiors. Researchers (Roslan et al., 2020) have found that the attitude of users towards technology adoption is an important determinant of intention to adopt the technology. Even though studies have revealed that positive attitudes among users encourages intention to adopt WhatsApp for learning, there is a lack of literature that discusses instructors' sentiments on the adoption of WhatsApp for teaching and communicating with students. Furthermore, there is a lack of understanding on instructors' attitudes and beliefs towards the integration of MIM applications (i.e., the use of WhatsApp) in pedagogical methods within and beyond the classroom setting. Instructors' attitudes and beliefs in the adoption of MIM applications, as well as their pedagogical methods can affect the successful implementation of mobile technologies for teaching and learning in HEIs.

Even though there is growth in the penetration of mobile technologies in today's HEIs, little research has been done to study the effects of integrating MIM applications into Malaysian HEIs (Alwi et al., 2014; DeWitt, Naimie, & Siraj, 2013). Furthermore, past studies (Aaron & Lipton, 2018; Ahad & Lim, 2014; Berry & Westfall, 2015) have focused on the disruptive nature of mobile technologies within the classroom from instructors' more positive perspectives rather than understanding instructors' attitudes and viewpoints on how they adopt and adapt to the change of using MIM applications beyond the classroom setting. Other studies (Al-Hunaiyyan, Alhajri, & Al-Sharhan, 2018; Al-Senaidi et al., 2009; Baek et al., 2017; Bidin & Ziden, 2013) have examined the technical challenges that instructors face in adopting the use of mobile technologies for teaching but have failed to address instructors' perspectives towards adopting and adapting to the use of MIM applications for teaching and communicating with students.

Past studies on the adoption of mobile technologies in Malaysian HE contexts also did not examine the impact of MIM applications in instructors' personal and professional lives (Ali et al., 2019). Instructors who can successfully adapt to the rapid change of integrating mobile technologies in their pedagogical approaches may prove to offer an advantage for students' learning. However, change is never an easy task for implementation in any institution and will require consideration and possible efforts from political, technical, cultural and learning activities perspectives (Corbett & Rossman, 1989; Passey, 2010). Thus, this study seeks to understand the effects of WhatsApp on instructors' personal and professional time after working hours, as well as instructors' perspectives towards the adoption and adaptation of using or not using MIM applications with students.

2.6 Technology Acceptance Model (TAM)

One of the most widely used models that examines individuals' acceptance of technologies from a system's viewpoint is the Technology Acceptance Model (TAM) (Davis, 1989). The model originated from the Theory of Reasoned Action (TRA), which was proven to be useful in understanding

behaviours and individual's intention to engage in certain behaviours in social and psychological contexts (Ajzen & Fishbein, 1980; Kiesler, 1981).

Davis (1989) suggested that an individual's decision to adopt new technology is affected by several factors and the decision to adopt is termed as behaviour intention (BI). Alturki and Aldraiweesh (2022) stated that BI is "one's desire to carry out a specific action" (p.6). The researchers (Alturki & Aldraiweesh, 2022) found that BI is positively affected by an individual's satisfaction and perceived usefulness (PU) of using the technology. In this study, positive experiences of adopting MIM applications with students will likely encourage instructors' intention to continue with the use of MIM applications with students. BI is also influenced by attitude towards technology (Holden & Karsh, 2010). Sanzhez et al. (2019) stated that instructors who have a negative attitude towards adopting mobile technologies for teaching are more likely to resist the change of integrating such technologies into their pedagogical methods.

Davis (1989) coined the terms "perceived usefulness" (PU) and "perceived ease of use" (PEOU) in a study of determinants that affect an individual's technology acceptance and adoption through the study of TAM. Davis (1989) initially designed TAM with two main constructs, PU and PEOU to replace TRA's attitude construct. The model consists of PU, which defines an individual's belief in how systems can enhance job performance. The other construct, PEOU, defines an individual's belief in how systems can be used effortlessly (Davis, 1989; Fathema, Shannon, & Ross, 2015). The model was intended to study individuals' intentions to use information systems and how individuals perceive the use of a particular system would improve their job performances (Mathieson, 1991). PU has been found to be a significant predictor of student satisfaction and behaviour intention of adopting mobile learning (Alturki & Aldraiweesh, 2022). Indeed, PU is also a significant predictor for instructors' behavioural intentions to adopt mobile technologies for teaching (Hong, Zhang, & Liu, 2021).

On the other hand, PEOU is also a significant predictor of BI when it comes to technology adoption (Hoi & Mu, 2021). Hong et al. (2021) conducted a study on pre-school teachers' technology acceptance and adoption during the COVID-19 pandemic. PEOU was a key factor in influencing BI at the early stages of technology adoption rather than at the later stage (Hoi & Mu, 2021; Venkatesh, Morris, Davis, & Davis, 2003).

TAM provides an explanation about an individual's intention to adopt technology based on the constructs of PU and PEOU, which have been identified as the most important constructs in the model (Abdullah, Ward, & Ahmed, 2016). The model has been used to predict an individual's likelihood of adopting a new technology, but individual differences and external factors also influence one's intention to adopt the technology. TAM is versatile and has been used extensively across technology acceptance research in various fields of study (Hoi & Mu, 2021).

In this study, instructors' decisions to adopt and adapt to using or not using MIM applications can be affected by four factors that contain external influences, which are cultural, political, technical and learning activity. TAM is insufficient to examine instructors' intention to adopt MIM applications as an additional aim of this study is also to understand the detail of instructors' adaptations towards using or not using MIM applications. The phenomenon of using MIM applications for teaching and learning beyond the classroom setting requires further examination to better understand which factor (i.e., cultural, political, technical, and learning activity) will potentially influence instructors' willingness to adopt as well as adapt to using or not using MIM applications with students. Furthermore, the intention to adopt MIM applications can be influenced by instructors' perceptions and experiences of using the MIM application (Reinicke & Marakas, 2005), which can also occur beyond classroom contexts. TAM, it is argued, excludes social development of technology usage and implementation (Bagozzi, 2007), which is a perspective that is necessary to be included for the purpose of this study. The external factors (i.e., political, cultural, technical, and learning activity) are needed to better understand instructors' perspectives and their adaptation towards using

or not using MIM applications in teaching and learning, particularly after office hours.

2.7 Past theoretical frameworks and concepts related to change in schools

With the proliferation of the Internet, change is inevitable in HE (Hu, Laxman, & Kee, 2020). Corbett and Rossman (1989) noted that the implementation of change is necessary should institutions desire improvements. Thus, educators play an important role in the process of implementing change for effective improvements within HEIs (Corbett et al., 1988). The trend of adopting mobile technologies, particularly MIM applications, has seeped into HEIs and affected instructors' personal versus professional lives (Stickney et al., 2019; Bakirtas & Akkas, 2020). The recent COVID-19 pandemic has further intensified the adoption of mobile technologies for teaching and learning, especially with mandatory lockdowns that were imposed by the authorities (Ghislieri et al., 2022).

Such drastic changes in HE calls for an understanding of instructors' perceptions or sentiments towards the adoption and adaptation of integrating mobile technologies into their professional and personal lives. As employees, instructors are expected to participate in changes that occur within the workplace (i.e. HEIs) (Phan & Sethu, 2019). Thus, integrating mobile technologies into teaching is no longer an option, but a requirement in HE. Furthermore, communication between instructors and students is no longer confined within HE classrooms but has moved out-of-classrooms with the existence of mobile technologies (Elhay & Hershkovitz, 2018; Nguyen, 2018). Exploring factors that influence instructors' adoption and adaptation towards this change of using MIM applications with students is necessary if HEIs are to encourage instructors to be more engaging with students through the use of MIM applications.

Seminal works and current studies have examined change within K-12 (between 6 to 12 years old) schools (Corbett & Rossman, 1986, 1989; Passey,

2010) and identified various factors that have contributed to the success of implementing change in terms of technology adoption amongst school's staff and culture. The extent to which students are able to reach instructors beyond the classroom is influenced by factors described in Corbett and Rossman's framework (1989), which are the technical, political, and cultural factors, and these are added to by the learning activity factor mentioned by Passey (2010) in his study on mobile learning.

Corbett and Rossman (1989) highlighted that change takes place in accordance with the way "how work is done, the distribution of power, and existing shared values" (p.163) during its process. Successful implementation of MIM applications in HEIs requires instructors to adapt to the change in students' learning culture, as well as potentially adopt new pedagogical methods. Passey (2010) noted that cultural acceptance on the use of mobile technologies, coupled with the appropriate learning activity, offers benefits towards students' mobile learning experiences. Thus, it is imperative for instructors to participate in the process of change and in this instance, the change of keeping up with the use of MIM applications in students' learning culture. Indeed, external influences such as institutional support can affect instructors' adaptation towards adopting or adapting to the use of MIM applications with students. Institutional support in embracing change has also proven to be an external influence due to the political perspective of implementing and supporting change within HEIs. External influences can be barriers of adopting change in HEIs (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012) and in this context, instructors' willingness to adopt and adapt to the use of MIM applications with students can be affected by political factors (e.g. the influence of the government, HEI's management, instructors' superiors, or peer pressure).

Firstly, the technical perspective involves availability of important resources, systematic planning, and opportunities to discuss as well as adapt innovation (Corbett & Rossman, 1989). The perception of using MIM applications beyond the classroom can yield positive or negative sentiments for either the instructor or the student, depending on the problems faced from the

technical perspective. Corbett and Rossman (1989) noted that implementers of new systems should experience a continuous sequence of activities that involve receiving constant information about new practices in addition to being able to try out the new systems. In this context, connectivity is important for individuals to embrace new technology in HEIs. The use of MIM applications will require Internet connectivity, regardless of time and geographical location.

Secondly, the political factor poses a limit to which instructors may choose to allow or ignore students who try to reach them through MIM applications after working hours. Furthermore, instructors may also negotiate the need to adopt and adapt to the use of MIM applications with students should HEIs or superiors impose policies that require them to adopt the technology. The political perspective examines the power interplay between relevant parties within the institution (Corbett & Rossman, 1989). The direction of change can be influenced by divergent interests amongst relevant parties (e.g. the relationships of instructor-student, instructor-superior, instructor-HEI management, and instructor-instructor). Instructors who do not wish to adopt MIM applications with students may find ways to reject the adaptation towards this change, whereas instructors who are interested to adopt MIM applications may alter their behaviours and practices to adapt to the change of using MIM applications with students.

Thirdly, the cultural factor emphasises socially shared norms and definitions of what ought to be practiced between instructors and students with regards to the use of MIM applications beyond classroom settings. Corbett and Rossman (1989) stated that within the cultural factor, relevant parties' values, beliefs, and norms determine the adoption or alteration of a particular innovation. Individuals involved in the implementation of change reflect their values and beliefs to shape norms that are acceptable within the community. Furthermore, culture is not static and can be negotiated (Ramsay, 1991). Instructors may need to adapt to the change of using MIM applications with students due to cultural norms or practices in today's HEIs. However, this study also seeks to understand instructors who are unwilling to adopt MIM

applications with students and their adaptation towards the change in culture, that is, using MIM applications in HEIs for academic teaching and learning.

Passey (2010) highlighted a fourth factor – learning activities, which will influence the adoption of change together with cultural and political factors at a wider systemic level. In order to successfully implement change, cultural acceptance and involvement of learning activities have to take place within the teaching and learning context. Six learning activities were identified from the research that can benefit learners from adopting mobile technologies in teaching and learning, which are “review and reflect,” “think forward,” “listen to my explanations,” “snap and show,” “this is what I’ve done and how I’ve done it,” and “tell me how I could improve this” (Passey, 2010). Instructors in this study may be influenced to adopt MIM applications due to a change in pedagogical methods of facilitating learning activities, as past studies have found the adoption of MIM applications to be beneficial towards students’ collaborative learning (Kukulska-Hulme & Viberg, 2018; Tang & Bradshaw, 2020). On the other hand, instructors may also adapt to the use of MIM applications through different learning activities, as the technology may provide more convenience and benefits in the teaching process (Nkhoma, Thomas, Nkhoma, Sriratanaviriyakul, Truong, & Vo, 2018; Pimmer et al., 2021).

In this study, adopting the use of MIM applications is a phenomenon that can be intruding in the professional and personal lives of instructors due a change in adopting mobile technologies in HEIs. The change of adopting MIM applications with students for teaching or communication purposes was sudden and quick with the evolving nature of implementing technologies in HE, particularly seen as a result of the recent pandemic crisis (Eppard et al., 2019; Hwang et al., 2021). However, instructors may choose not to adapt to using MIM applications to communicate with students. Hence, the purpose of this study is to examine the influences of cultural, technical, political and learning activity factors that affect instructors’ willingness to adopt the use of MIM applications, leading to their willingness to adapt to using or not using MIM applications with students.

Instructors' knowledge or skills in adopting technologies are also influenced by technical factors such as institutional support in providing technological platforms for pedagogical purposes (Krishnamoorthy & Keating, 2021; Onyema et al., 2021; Salam, Oyekwe, Ghani, & Choudhury, 2021). When institutions provide sufficient technological support, instructors and students tend to be more engaging in the teaching and learning process (Ibrahim et al., 2021). Corbett and Rossman (1989) examined the technical factor that influences change within educational institutions and found that receiving training or information on new practices encourages instructors to try out new technology adoption. Thus, adequate training and technical support should be given to ensure the smooth implementation of change in HEIs. When instructors experience dissonance in the technical aspect of new changes, such as adopting mobile technologies for teaching, they turn to the cultural path of adopting or adapting to that change (Corbett & Rossman, 1986).

Past literature has highlighted some internal influences that affect instructors' use of technologies, which include instructors' motivation, knowledge, attitudes and beliefs (Ertmer et al., 2012; Tang & Hew, 2022). These internal influences can be categorised into cultural norms or practices that are cultivated within an individual's background or by their surroundings (Ramsay, 1991). Culture is an important factor in influencing change within HEIs. Instructors' willingness to adopt and adapt to using or not using MIM applications with students can largely be influenced by students' culture as well as current pedagogical trends. With the increasing number of students using MIM applications as a form of communication as well as to connect with peers and instructors for learning, instructors are left without a choice but to adopt the new technology in alignment with the change in students' learning culture (Mohomed, et al., 2019; Andújar-Vaca & Cruz-Martínez, 2017; Batmetan & Palilingan, 2018).

In this study, the political factor is identified as institutional or supervisory pressure imposed on instructors in enforcing them to adopt MIM applications with students. Indeed, this study also views instructors' willingness to adapt to using or not using MIM applications with students from a political perspective. In

other words, how do instructors engage in political aspects of adapting to using or not using MIM applications with students? In classroom settings, instructors are the highest authority. However, MIM applications have enabled students to contact instructors beyond the classroom setting after office hours. Instructors' adaptability towards this change warrants attention to further understand how they use their authority to implement boundaries or adapt to the use of MIM applications with students. Divergent interests involve power struggles in changes that occur within HEIs (Corbett & Rossman, 1989). Institutional policies as well as policies set by instructors for classroom practice affect students' responses towards the changes that take place, including changes that are beyond the classroom setting. In any implementation of change within an institution, the political factor scrutinises how systems are set by those in authority (Corbett & Rossman, 1986; Tichy, 1982).

2.8 Other concepts on work-life balance and change

Besides the factors that may influence change and adaptation towards change in educational settings, topics of organisational change and behaviour have been examined in the field of business and management (Tichy, 1982). For example, Brod (1984) coined the term "technostress" in organisational change of adopting new technologies, which describes an individual's inability to adapt to the constant change of integrating new technologies on the job. Technostress causes an individual to experience burnout at work. Researchers (Yener, Arslan, & Kilinc, (2020) stated that technology has the potential to create stress amongst employees. As such, one needs to identify coping strategies that will minimise stress levels of using new technologies at work.

The role of instructors is important in integrating new technologies in education. Thus, maintaining work-life balance is essential towards instructors' psychological and physical wellbeing (Panisoara, Lazar, Panisoara, Chirca, & Ursu, 2020). One of the factors that contribute towards instructors' anxiety of adopting mobile technologies is the lack of support and knowledge in the process of integrating these technologies into their pedagogy. Furthermore, systemic changes within HEI settings can affect instructors' stress levels as

they cope with the need to learn and adopt new technologies on the job (Shin & Jung, 2013).

In this study, the change of using MIM applications with students in HE will be understood from the perspective of instructors' willingness to adopt and adapt to this change. As employees, instructors are compelled to accept changes that take place within their organisation of employment (Buchanan et al., 2013). Adopting and adapting to the change of integrating mobile technologies into pedagogical methods or professional work (i.e. teaching and creating academic materials) can create stress for academics, as they manoeuvre between learning new technologies and creating new content that conforms to the technical aspects of the mobile technologies that are being used for teaching and learning (Currie & Eveline, 2011; Christensen & Knezek, 2017; Heijstra & Rafnsdottir, 2010). Furthermore, the use of MIM applications has blurred the boundaries between personal versus professional time beyond the workplace (Huang & Zhang, 2019). Therefore, understanding factors that influence instructors' willingness to adopt and adapt to using or not using MIM applications with students, particularly beyond office hours, can help mitigate instructors' stress or anxiety levels with regards to mobile technology adoption for teaching.

From a focus on the gaps in the literature, the findings of this study will contribute to the understanding of: (1) the effects of political, cultural, technical and learning activity factors on instructors' adoption of MIM applications for teaching and communicating with students beyond the classroom in Malaysia; and (2) instructors' views towards adapting to the change of using or not using MIM applications for teaching and communicating with students beyond the classroom. The cultural, technical, political and learning activity perspectives will yield criteria for measuring adaptation to change, which future research can use to explore the possibility of measuring change quantitatively as well as qualitatively.

2.9 Gaps in literature reviewed

Several gaps were identified in past and recent studies on MIM applications. Firstly, past studies failed to understand instructors' willingness to adopt the use of MIM applications for teaching, particularly after office hours or beyond the classroom setting. Fu and Hwang (2018) found that even though many studies on using mobile technologies for teaching and learning have been conducted in the recent years, few studies have focused on instructors' perspectives of integrating mobile technologies to support learning. Even though previous studies have addressed mobile learning from students' perspectives on the use of MIM applications in the classroom (Monica et al., 2021; Pimmer et al., 2018; Santos et al., 2017; Tang & Hew, 2017), as well as noted that mobile technologies enhance students' learning experiences (Kim et al., 2019; Tang & Bradshaw, 2020; Urien et al., 2019), instructors' perspectives or sentiments on the use of MIM applications were not examined. The ubiquitous nature of MIM applications allows for almost immediate interaction to take place, regardless of place and time (Huang & Zhang, 2019). As such, instructors are increasingly being bombarded with pressure to adopt MIM applications for teaching. Instructors' sentiments on such constant social presence via MIM should be examined in order to align students' and instructors' expectations in using MIM applications for teaching and learning.

Secondly, instructors' adaptation to technological changes requires further understanding and examination in an environment where new technologies are seeping from formal to informal contexts. The inability to juggle between professional and personal lives due to the use of mobile technologies can negatively impact instructors' physical and psychological wellbeing. Studies in recent years (Fu & Hwang, 2018; Pimmer et al., 2018; Pimmer et al., 2021; Pooley et al., 2019; Qashou, 2019; Zhang, Lo, So, Chiu, Leung, Ho, & Stark, 2021) have mostly examined learners' perspectives and adaptation towards mobile technologies, as well as the use of MIM applications for learning. However, these studies have failed to address instructors'

adaptation towards the integration of new technologies into their pedagogical methods.

Since MIM applications are being adopted as a current practice amongst students in the HE context, it is essential to understand instructors' adaptation towards students' changing culture of learning in HE. Instructors are agents of change in the HE context (Passey, 2010). As such, understanding instructors' sentiments on the current trend of using MIM applications for teaching and learning is vital for a seamless integration of using mobile technologies to enhance the quality of HE. The current study seeks to understand the impact that MIM applications have on instructors' personal and professional lives since such innovation is being adopted in the HE setting. The lack of focus on the impact of MIM applications towards instructors' professional versus personal lives calls for further research.

Finally, if instructors are to be considered as "actors" in the process of adapting and adopting the culture of integrating the use of mobile technologies in HEIs, instructors' perspectives on the challenges of adopting and adapting to the change of using MIM applications beyond the classroom need to be examined to better formulate policies that would encourage instructors to change and innovate their pedagogical methods of transferring knowledge beyond traditional methods. Huang and Zhang (2019) noted that MIM applications afford near synchronous communication amongst individuals for work purposes. However, the effect of being able to synchronously or asynchronously connect with students through the use of MIM applications can create a tension for instructors in terms of managing professional versus personal roles and time. Nguyen (2018) labelled the collision of professional versus personal lives as a 'context collision', whereby the instructors' desires to maintain a social yet professional role in their relationship with students meets a context collision with the existence of social networking sites (i.e. MIM applications) through the use of mobile technologies for teaching and learning. Therefore, the use of MIM applications in HE should also be examined and understood from the instructor's perspective in order for effective teaching and learning to be implemented in HEIs.

2.10 Research Questions

Reviewing past literature on change and the use of mobile technologies in HE raised the following research questions for this study:

RQ1: How do political, cultural, technical and learning activity factors affect Malaysian instructors' willingness to *adopt* the use of MIM applications with students after office hours?

RQ2: How do Malaysian instructors *adapt* to the change of using or not using MIM applications for teaching and communicating with students beyond the classroom setting?

2.11 Summary of Chapter 2

In this chapter, I have highlighted the pathway of conducting literature review. I have also provided reasons for reading through theoretical and substantive reviews of past literatures on the given topic of this study to highlight the theoretical knowledge that will be relevant to this study. The literature reviewed included (1) the use of mobile technologies in learning, (2) the benefits of adopting mobile technologies in HE, (3) challenges and disadvantages in adopting mobile technologies, (4) MIM and its functions in HE, (5) the use of WhatsApp in HE, (6) gaps in the literature reviewed, (7) TAM, (8) past theoretical frameworks and concepts related to change in schools, and (9) other concepts on work-life balance and change related to organisations in other contexts.

Chapter 3: Methodology

3.0 Research Methodology

This chapter begins with a brief discussion of some of the key ontological, epistemological and methodological paradigms in research that relate to the present study. A research paradigm within a discipline matrix consists of ontological assumptions, epistemology and exemplars for scientific practice (Kuhn, 1996). The researcher can be confronted with an array of philosophical and theoretical viewpoints, which requires one to define the nature of social reality and the basis of social order to provide explanations of social life (Blaikie & Priest, 2017). Research paradigms focally can provide alternative ways to investigate and address research problems (Ataro, 2020; Blaikie & Priest, 2017).

The purpose of this study is to understand how political, cultural, technical and learning activity factors affect instructors' adoption of MIM applications, as well as adaptation towards using or not using MIM applications to communicate with students. My interest in studying the phenomenon of instructors' uses of MIM applications with students stemmed from my personal experience as an instructor at a private HEI in Malaysia. I have received many students' requests pertaining to using WhatsApp as a form of official communication for teaching and learning purposes. WhatsApp is a common MIM app used in Malaysia's HEIs, whereby students will need to obtain an instructors' personal mobile telephone numbers to gain access into the MIM app and contact the instructor. This phenomenon prompted me to conduct a thorough literature review on instructors' use of MIM applications in HEI, as reflected in Chapter 2, to understand past studies on instructors' use of MIM applications with students. The tension in drawing a boundary between professional and personal time of using MIM applications with students triggered my curiosity to conduct a study on this topic. Jarvis (2018) noted that researchers can take a practice perspective that combines the grounded theory method when studying issues which are related to power in HE. Such efforts

may yield to a constructing of practices that provide more visibility about underpinnings of power relations in the HE setting when different views of human agency are involved in the study (Jarvis, 2018). Considering my role as a HE practitioner, I felt that the political factor and power struggles of adopting and adapting to using or not using MIM applications with students may affect future pedagogical practices. Furthermore, the cultural context of adopting MIM applications in Malaysia has been trending in HEIs. As such, I also wanted to understand the cultural implications of using MIM applications in HEIs amongst instructors in lieu of the evolving culture of learning in HE.

Research in mobile technologies for education, particularly the use of MIM applications, have often focused on understanding students' use in learning (Amry, 2014; Montag et al., 2015; Rienties, Brouwer, & Lygo-Baker, 2013). However, research in the use of MIM applications amongst instructors lacks understanding on what compels instructors to adopt MIM applications and how the adoption of MIM applications impact instructors' personal as well as professional lives. It can be argued that the use of MIM applications among instructors is underexplored and, therefore, this exploratory study seeks to understand instructors' sentiments on adopting and adapting to using or not using MIM applications with students. I have strived to approach the research questions with transparency and honesty, as I engaged in high reflexivity in my data collection and analysis while being aware of my position as the researcher of this study (Saldana, 2014). Writing memos is a form of reflexivity (Creswell, 2014), which I have adopted in this study from the moment I began with my data collection.

The selection of grounded theory and comprehensive steps that I have taken for the analysis of the data will address the research problems of this study, which is relatively unexplored. The data analysis discussed in the following section seeks to unfold the complexity of this exploratory phenomenon through rich data gathered.

3.1 Ontology, Epistemology and Methodology

The ontological and epistemological approaches to understanding reality determines how a phenomenon is approached by the researcher (Ataro, 2020; Starks & Brown Trinidad, 2007). Pilarska (2021) noted that paradigms are fundamental in constructing the design of a research study. As such, my ontology and epistemology define my research paradigm, which influences the design of my enquiry. Ontology refers to the assumptions one makes on the nature of reality, while epistemology refers to how we know what we know or gain knowledge in this world. Both ontology and epistemology lead the researcher to determine the methodology for a particular phenomenon studied, which is the sharing of what are considered best means to understand and gain knowledge about the world (Kaushik & Walsh, 2019).

My ontology revolves around nature as a subjective reality, whereby social phenomena are constructed through realities perceived by social actors who exist within the context of a phenomenon studied. The meaning of the reality can only be interpreted by individuals who are involved in experiencing the phenomenon in the given context (Maxwell & Chmiel, 2013). The relativist ontological position that I have taken in this study reflects my epistemology of how knowledge is created and only exists in the particular context where it is generated (Lincoln & Guba, 2013). Therefore, I have adopted semi-structured interviews to understand how political, cultural, technical and learning activity factors affect instructors' adoption of MIM applications, as well as which factors influenced instructors' adaptation towards using or not using MIM applications with students.

Charmaz and Belgrave (2012) noted that when researchers begin an interview with participants, both individuals are unfolding a story and assigning meaning to the phenomenon. During the data collection stage, participants take precedence in assigning meaning to the phenomenon. In data analysis stages, the researcher begins to interpret and reflect on the data to make sense of the phenomenon from the interviews. Therefore, interpretation of the phenomenon is constructed by both the participants and researcher. In the process of data

collection and analysis, I have reflected on my conversations with the participants and took memos as a reflexive approach to viewing the data. In this context, Charmaz (2017) posited that researchers should engage in self-reflexivity in the process of gathering and analysing data to engage in critical qualitative enquiry.

When analysing the data, the researcher's emerging theoretical categories take precedence to construct a theoretical narrative and piece data together (Ataro, 2020; Eberle, 2013). My ontological and epistemological assumptions led me to inductively approach my data, which is to use Grounded Theory (GT) as a form of analysis to understand how political, cultural, technical and learning activity factors affect instructors' adoption of MIM applications and how instructors cope with the change of using MIM applications beyond the classroom setting.

3.2 Constructivist Grounded Theory (CGT)

Grounded theory (GT) as a method for analysis was first introduced by Glaser and Strauss (1967), who were considered as the first-generation pioneers (Bryant & Charmaz, 2019). Flick (2018) highlighted that in the 1990s, GT was further developed by second generation researchers such as Corbin and Strauss (the interactive-constructive approach), and slowly evolved in its methods of analysis through the works of Charmaz (the constructivist-interpretivist approach) and Clarke (the situational analysis approach). The original GT by Glaser and Strauss (1967) contained positivistic assumptions but many scholars have moved GT away from the positivistic lens of approaching data throughout the years. Charmaz (2006) emphasises four criteria for CGT: credibility, originality, resonance and usefulness. Credibility concerns 'having sufficient relevant data for asking incisive questions about the data' (p. 135) so that the researcher is able to develop a thorough analysis in the process. Originality relates to establishing new insights on the problem that has not been studied before. Resonance demonstrates the researchers' ability to construct concepts that provide insights to others besides representing participants' experiences. The final criterion of Usefulness indicates the foundation for

practical implications from the current research, which also contributes to creating new areas of concern for future research (Charmaz, 2006; Charmaz & Thornberg, 2021).

Charmaz (2006) posited that GT takes the research a step further through its inductive, comparative, iterative and interactive ways of understanding a particular phenomenon. The process requires the researcher to reflect on the data collected, constantly comparing and interpreting the data based on memos as well as participants' interpretation of the phenomenon (Charmaz & Thornberg, 2021). CGT is constructed by the researcher through their lens and worldview (Charmaz & Thornberg, 2021; Chun Tie, Birks, & Francis, 2019). The proposed CGT considers the context of which research is conducted. Charmaz (2006) argued that researchers construct meaning and make sense of their experiences in the process of understanding a particular phenomenon, as researchers are part of the context while conducting the study. Thus, it is imperative for the researcher to keep memos as a reflexive process for theory development and understanding participants' formation of meaning in everyday life (Cornejo-Araya & Kronborg, 2021).

Besides deriving meaning from the data, the researcher's reflexivity on what is reality influences the way data are interpreted (Charmaz & Belgrave, 2012). Charmaz (2020) emphasised that it is vital for researchers to learn the problems and perspectives of participants whom they study. The constructivist approach takes on a relativist viewpoint (Lincoln & Guba, 2013). Hence, CGT focuses on the studying process, connecting situations, meanings, individuals and social structures that may remain invisible. Individuals who experience and are involved in the phenomenon provide interpretation towards the phenomenon. Lincoln and Guba (2013) stated that interpretation towards a phenomenon is influenced by individuals, whereby one can "change the individuals and you change the reality" (p. 39). The researcher's involvement and engagement in studying the social process leads him or her to a deeper awareness of participants' worlds, which helps in conceptualising new understandings (Charmaz, 2020).

Charmaz (2017) positioned CGT as “a contemporary version” of Glaser and Strauss’s GT. Constructivist grounded theorists assume that researchers already possess theoretical and research knowledge prior to engaging the data for analysis. Thus, when researchers come across a research interest, they are able to evaluate the fit between their interest and the emerging data (Charmaz, 2006). In addition, CGT examines the social, historical, temporal and situational contexts of the topic being studied (Charmaz, 2017). As researchers embark on the journey of understanding a social phenomenon, their personal experiences and interpretation of the phenomenon are important in constructing meaning within the theoretical development (Charmaz, 2006).

Chapter 2 of this study reviewed literature related to possible factors that can impact change within schools as well as organisations. The literature that has been reviewed also discussed about theories that are being studied in the field of educational technology and technology enhanced learning. The reason for reviewing literature within the areas of change in schools, change in organisations, as well as theories or concepts related to educational technology and technology enhanced learning is to equip me, the researcher, with knowledge within the fields that examine similar topics related to my study. This is to ensure that I have sufficient knowledge to conduct abductive analysis of my data for theoretical categories to emerge and form explanations for this empirical phenomenon.

Tavory and Timmermans (2018) argued that grounded theory should move beyond inductive reasoning to abductive reasoning. Abduction allows for justification on ‘how knowledge occurs, the relationship between scientific discovery and justification, as well as how theory is infused in the research process’ (Tavory & Timmermans, 2018, p.535). Abductive analysis accounts for all possible hypothetical situations as well as allows for imaginative interpretations and reasoning of the data for the conception of theoretical explanations from data collection and analysis (Charmaz, 2008).

The purpose of conducting this study was to understand the sentiments and perspectives of instructors towards adopting and adapting to using or not

using MIM applications with students. Using the CGT approach helped me explicate instructors' responses into theoretical categories that could explain the empirical phenomenon of their willingness and adaptability towards using or not using MIM applications with students. Going into this research, I did not have any idea on what I would find for theory construction. Charmaz (2008) stated that possessing sufficient theoretical knowledge in the field is necessary to help researchers 'discern and follow theoretical leads from examining their data' (p.158). Therefore, reviewing past literature in relevant fields of factors that affect change in schools, change in organisations, and technology enhanced learning provided me with prior knowledge on theoretical foundations and past empirical studies that had been examined within the field of study. However, I could not anticipate where my theoretical inquiry would take me, as the emerging concepts began to unveil from the data to form theoretical explanations of the data.

Subsequent sections of this chapter will describe the procedure of data collection and analysis through the perspective of CGT as a method for analysis. The researcher is not independent from the analysis but becomes part of the constructed reality to provide interpretation and formation of grounded theory in this study (Lincoln & Guba, 2013). Charmaz (2008) stated that 'grounded theory focuses on the process of analysis and development of theoretical categories, rather than focusing solely on results of inquiry' (p.156). Thus, my approach of adopting CGT to understand instructors' adoption and adaptation towards using or not using MIM applications with students seeks to understand possible factors that influence their willingness or reluctance to use MIM applications with students. Furthermore, the CGT approach considers my role as the practice-researcher, whereby my personal experience as an instructor and research in this study contributes to the data collection and analysis process through reflective memos.

Studies in the past (Cornejo-Araya & Kronborg, 2021; Parsonage, Naylor Lund, Dawes, Almoajil, & Eklund, 2020; Reyes, Kearney, Isla, & Bryant, 2018) have successfully adopted CGT to understand problems in substantive areas that require generating abstract concepts and specifying relationships between

the concepts. For example, Cornejo-Araya and Kronborg (2021) conducted a study to understand outstanding teachers' interactions with their gifted and highly able students. Based on CGT analysis, the researchers formed a new theoretical model that seeks to understand positive effects that inspiring teachers have on gifted and highly able students based on data that emerged from the study. The theoretical model consisted of 3 phases that inspiring teachers experienced in teaching gifted students through an iterative process in the data analysis. Furthermore, the researchers developed 3 categories from the data obtained, which described the characteristics of an inspiring teacher. In addition, the theoretical model also identified 4 contextual determinants that influenced teachers to inspire gifted students in their classes. Such studies that involved in-depth interviews and observations using CGT analysis are able to provide deeper insights and better understanding on outstanding teachers' psychological, intellectual characteristics and ability to inspire gifted students (Cornejo-Araya & Kronborg, 2021).

In this study, I seek to understand possible factors that will influence participants' willingness to adopt MIM applications with students. In addition, I also seek to understand how participants engage with various factors that would help them adapt to using or not using MIM applications with students. Using the CGT approach has enabled me to dive into deeper insights on participants' sentiments towards the use of MIM applications with students, as well as their adaptation towards using or not using MIM applications with students. As categories emerged from the data, the CGT method allowed me to construct findings through different stages of coding (i.e., initial coding, focused coding, and theoretical coding). At all stages of data collection and analysis, I reflexively wrote memos to help capture and interrogate emerging categories that would construct a theoretical explanation of my data. Grounded theory is a 'complex, multistage genre of qualitative research' (p.7) that would produce a theoretical explanation for the empirical phenomenon in a study (Saldana, 2011). Hence, this study seeks to produce a theoretical model to explain instructors' sentiments towards adopting and adapting to using or not using MIM applications with students, particularly after office hours.

3.3 Data collection and organisation

Prior to data collection, ethical approval was obtained from the Department of Educational Research at Lancaster University (Appendix 1). After obtaining permission, I sought potential participants through my peer network within the HEI where I am currently employed. I sent an email to the participant, with the participant information sheet attached in the email so that I could seek their consent (Appendix 2). I also asked if they knew other potential participants after proceeding to explain to the participant about the study. Further elaboration on the procedure of recruiting participants and data collection are provided in the following section. Robinson (2014) claimed that this form of snowball sampling, or chain sampling, is particularly useful when the population that is being studied are less likely to respond to advertisements or calls for participation in a research study due to the nature of the topic. In this study, instructors are less likely to respond to a call for participation to discuss about their sentiments on using MIM applications with students due to their busy schedule and repercussions of discussing such topics with strangers. Thus, utilising snowball sampling allowed me to reach this population in HEI settings easily, as well as provide an avenue for them to share their experiences openly when they are referred by a friend to participate in the study.

In order to gain an in-depth understanding on what factors impact instructors' adoption of MIM applications and how they adapt to using or not using MIM applications, I used the qualitative method of semi-structured interviews for this study. Qualitative studies often adopt semi-structured interviews to obtain 'information-rich' perspectives of participants in a particular phenomenon studied (Patton, 2002). Semi-structured interviews allowed me to explore instructors' feelings, opinions, and thoughts on the use of MIM applications with students, particularly focusing on beyond the classroom setting.

Scholars in qualitative studies often recommend researchers to recruit the number of participants until there is sufficient interview data for analysis, or

when data reaches a saturation point where no new information is yielded in the interviews (Flick, 2018; Saldana, 2011). In this study, data were analysed and obtained simultaneously, as this study adopted the CGT approach. The process of CGT requires the researcher to reflect, reiterate, and constantly compare the data with the interaction that takes place with the participant (Charmaz, 2006; Charmaz & Thornberg, 2021). Charmaz and Belgrave (2012) emphasised that the simultaneous process of data collection and analysis are the hallmark of grounded theory, as researchers should start with an area of interest first to form preliminary interviews and learn about participants' viewpoints. As I learned about participants' interests and experiences, I also began to develop my interview guides and expanded on the interview questions to obtain insights for the emerging analysis. Further elaboration on the process of developing interview questions will be discussed in the following sections.

Even though the sample size in this study was relatively small, Charmaz (2006) and Mason (2010) suggested that rigour in the analysis, as well as "modest claims" (p.114, Charmaz, 2006) may yield quicker saturation in the data collected. Indeed, Patton (1990) asserted that sample size in qualitative studies ought to align with information saturation. However, data obtained from semi-structured interviews cannot be generalised across all instructors in all institutions in qualitative enquiries. One of the strengths of using a qualitative method to collect data lies inherently within the subjective approach, which provides richness and depth of data obtained from every instructor's construction of how using or not using MIM applications impact their personal and professional lives, as well as their perceptions on this phenomenon in their profession (Galletta & Cross, 2013; Zapata-Barrero & Yalaz, 2018).

The following sections will provide further details on the process of gathering samples at the initial stages of the study, as well as the progress of subsequent data collection while I simultaneously analysed the data using the CGT grounded theory method. Figure 2 offers a visual representation of the procedure of data collection and analysis.

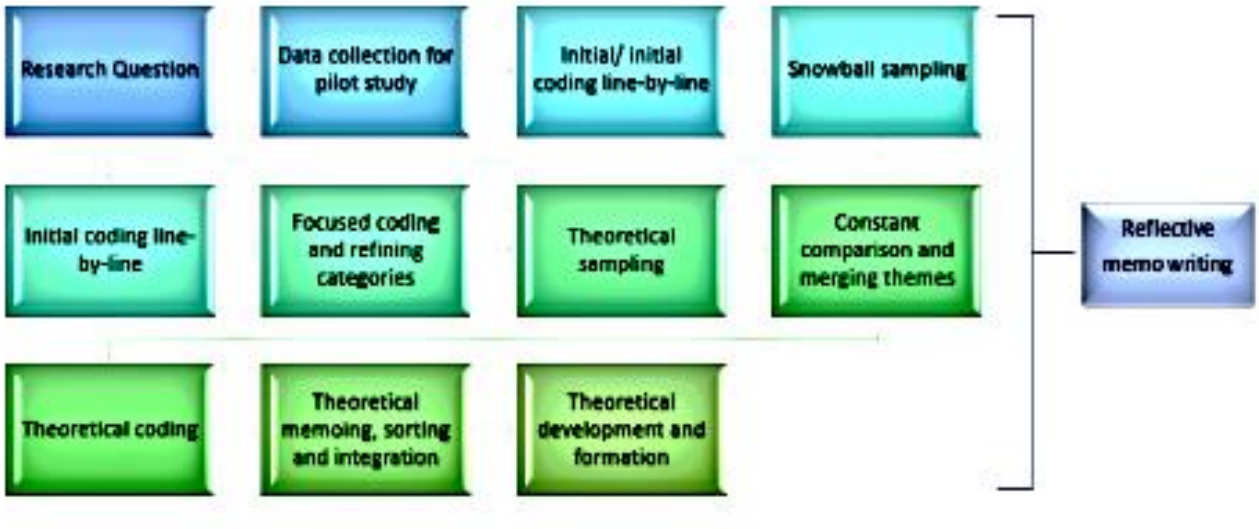


Figure 2: Process of Data Collection and Analysis (Adapted from Charmaz, 2006)

Table 1: Stages of Coding

Stage of Data Collection	Analysis of participants' data	Coding
1st stage of data collection & pilot study	P1 – P3	Initial coding
2nd stage of data collection	P4 – P6	Initial coding
3rd stage of data collection	P7 – P12	Initial coding and Focused coding
4th stage of data collection	P13 – P16	Focused coding
5th stage of data collection	P17 – P20	Theoretical coding

3.4 Initial sampling and procedures

At the initial stages of participant recruitment, I utilised my connection as an instructor at a private HEI in Malaysia to invite instructors from different faculties across campus to participate in this study. I began recruiting participants through my social network without limiting the possibility of obtaining participants who did or did not use MIM applications with students. I interviewed my first participant (P1), who was an acquaintance from my social network. She did not adopt MIM applications with students. I wanted to obtain an initial understanding on instructors' sentiments and willingness to adopt MIM applications with students, particularly after office hours. From the first interview that I had conducted, I obtained nuances on reasons that affected the participant's professional and personal life, which caused her to reject the notion of adopting MIM applications with students.

Subsequently, I approached other participants through the snowball sampling method, whereby my social network recommended instructors who were teaching in Undergraduate and Postgraduate programmes within private and public HEIs in Malaysia. Snowball sampling, which is part of purposive sampling, enables the researcher to identify people who know others who can provide rich information about the study (Miles, 1994; Neuman, 2011). The goal is to recruit participants who are able to provide deeper and significant thoughts towards the phenomenon, which is why open-ended questions were used in the semi-structured interviews. Atkins and Wallace (2012) noted that researchers have to be scrupulous and methodical in presenting a reason for the choice of interviewing as a method and address the issue of trustworthiness in the data.

The following criteria were determined in order to select participants for this study:

- Participants had to be teaching in Bachelor degree or Postgraduate programmes.
- Participants had to be teaching in an institution that is registered as a private or public university in Malaysia.

- Participants had to be full-time instructors.

I did not narrow the specifications of participants further, as the purpose of this study was to (1) understand factors that affected instructors' willingness to adopt or not adopt MIM applications, as well as (2) the influence of these factors in instructors' adaptation towards using or not using MIM applications with students beyond office hours.

This form of purposive sampling enabled me to obtain useful cases with rich information that would address the research questions for this study (Leavy, 2014, 2017). The research questions in this study seek to understand what factors influence instructors' willingness to adopt and adapt to using or not using MIM applications with students. Thus, participants who were instructors in HEIs qualified for this study, regardless of whether they used or did not use MIM applications with students.

An email invitation was sent to the participants, which consisted of (1) information about the objective of the study, and (2) an invitation for them to participate in a 45-minute to 60-minute interview (see Appendix 3). For semi-structured interviews, an interview schedule was formed to provide a guide as I began the interview. Table 2 displays a list of questions that were constructed in the interview schedule.

However, I also took a flexible stance and added additional questions throughout the interviews to prompt participants' clarification on the topic discussed. The interview schedule was a guide in providing open-ended questions for me to engage participants in a social conversation, but as the conversation began to move in different directions, I adopted the flexible approach to understand participants' experiences of using or not using MIM applications to communicate with students beyond the classroom setting (Forsey, 2012; Saldana, 2011).

Table 2: Interview Schedule

1.	What are some of the MIM applications that you use to communicate with people around you?
2.	What are some of the MIM applications that you use to communicate with students?
3.	What do you think are students' expectations of you in terms of using MIM applications after classroom hours?
4.	How do you view the functions of MIM for teaching and communicating with students beyond the classroom setting?
5.	When do you use MIM applications to communicate with students?
6.	What is your opinion on using MIM applications to communicate with students outside of the classroom?
7.	What is the reason for using MIM applications to communicate with students outside of the classroom?
8.	What topics do you discuss with students while using MIM applications to communicate with students outside of the classroom setting?
9.	In your opinion, who would benefit from using such apps to communicate beyond the classroom setting? Why?
10.	What are the challenges of using MIM applications in teaching?
11.	What are the benefits of using MIM applications in teaching?
12.	What are the challenges of using MIM applications to communicate with students beyond the classroom setting?
13.	What was your experience of using MIM applications with students in teaching?
14.	Can you tell me about an experience that you have had in using MIM applications to communicate with students after classroom hours?
15.	How has MIM impacted the instructor-student relationship for you?
16.	How much has MIM applications impacted your personal versus professional life?
17.	What is your expectation on students should they use MIM applications to communicate with you beyond the classroom setting?
18.	How does using MIM applications to communicate with students beyond classroom hours affected your personal life or schedule?
19.	How has the institution supported you in the adoption of MIM applications for teaching?
20.	What are your expectations on the institution's role in encouraging the use of MIM applications (e.g. MIM applications) in your profession?
21.	How would you ideally manage communications with MIM applications in future?

Upon sending the email invitation, three participants (including P1) responded to the initial sampling recruitment. Upon setting an appointment with each participant, I proceeded to brief them about the purpose of this study and obtain their consent to audio record the interviews before I began. The interviews were audio recorded using a smartphone and an audio recorder. Besides audio recording the interviews, I brought along a notepad and pen to record participants' expressions, keywords and phrases spoken by the participants. Charmaz (2006) suggested that such notes provide further understanding for the researcher to explore nuances of meaning and process that may add onto the richness of the data. I referred to these notes again when

I began transcribing and reflecting on each interview in my memos (Saldana, 2011). These notes and memos also helped me in learning the nuances of participants' language and meanings as I transcribed and reflected on what was written (Charmaz, 2006). Participants' feelings and views were also studied through the audio recording in addition to the personal notes that were taken during the interview.

Each interview lasted for approximately 45 to 60 minutes, and was manually transcribed in Microsoft Word Document. The transcription focused on spoken words without taking into consideration the nonverbal features of the participants, as the objectives of this study were to engage participants in a discourse to better understand factors that would influence their willingness to adopt or not adopt MIM applications, as well as factors that affected their adaptation towards using or not using MIM applications with students. Subsequently, each interview (in Microsoft Word format) was transferred into NVivo for organisation and manual coding. I assigned a pseudonym for each participant for privacy purposes.

3.5 Pilot study and initial coding stage

As a novice researcher, a pilot study enabled me to strengthen the overall methodological process while giving me the opportunity to shape and refine the interview schedule. A set of interview questions that consisted of twenty-one open ended questions (see Table 2) was constructed to provide a guide for the semi-structured interviews. At the initial stages of data collection for a pilot study, two participants were not familiar with the term "mobile instant messaging" (MIM) applications. As such, the word MIM was replaced with WhatsApp and/or WeChat, which were common MIM applications used in Malaysia.

The questions were prepared with a semi-structured interview in mind. Semi-structured interviews allow for the researcher to achieve clarification and understanding besides being able to elaborate on the questions asked. Clarifying questions and understanding with the interviewees can generate

more accuracy in data interpretation (Galletta & Cross, 2013). Adopting a semi-structured interview also maintains a sense of informal interaction with the participant without making them feel uncomfortable with the rigidity of a set of structured questions (Charmaz 2006). Preliminary data obtained from the pilot test were validated with the participants to further amend the open-ended questions, as suggested by the form and nature of participants' responses. Data obtained from subsequent interviews were also verified with the participants to increase the robustness of the data.

From the initial sampling, I began to analyse the data through initial coding by reviewing data from the 3 interviews (P1 to P3) line-by-line. Saldana (2014) defined coding as "patterning, classifying, and later recognising codes into emergent categories for further analysis" (p. 584). Charmaz (2006) claimed that initial coding 'eliminates clutter' and 'assumes objective transparency of what participants say and do' (p.69). Initial coding involves examining, comparing, conceptualising and categorising data (Starks & Brown Trinidad, 2007). While analysing the data in the initial coding phase, Charmaz (2006) suggested for the researcher to maintain openness so that new ideas can emerge from the data. Line-by-line coding in the initial coding stage allows the researcher to capture nuances in the data and prompts the researcher to be open (Charmaz 2006).

As I began coding the data line-by-line, I also wrote memos to record categories and ideas that emerged from the data. Table 3 provides a sample of the memos that I had written in the initial coding stage of data analysis. I relied on my reflexivity while acknowledging how my personal values and assumptions could affect the interpretation of my data (Ataro, 2020; Atkins & Wallace, 2012).

Table 3: Memo from Initial Coding Process

- Instructors are beginning to realise that students do not check through videos that are posted or given, do not pay attention to what is mentioned in class.
- Participants are saying that students are engaging in more self-seeking, clarifying behaviours rather than reading what is given to them by the instructor. Does this mean that students' learning is potentially moving towards knowledge creation? Instructors attribute this to laziness, lack of attention... I wonder if there is another way to interpret this?
- However, it looks like critical thinking is still lacking amongst students. Instructors attribute this to lack of maturity.
- Institutional culture of cultivating the use of MIM applications directly impacts instructors' adoption of using MIM applications for teaching. Slow or unsuitable systems set by the institution will cause instructors to adopt reluctantly. In this case, instructors are adopting for the sake of adapting into the fast-changing culture of using MIM applications to keep up with students' culture of using MIM for communication purposes.
- Institutional policies that are imposed for instructors to adopt on the job will also directly impact instructors' adoption of MIM applications. In the case of when the onus is on the instructors to adopt, the instructors would choose not to adopt. However, when the institution sets a KPI for instructors to adopt, they have no choice but to adopt unwillingly. Political forces may be the start of cultivating a culture of adoption.
- There seems to be an expectation for institutions to set policies and enhance resources such as ownership to the mobile devices in order for instructors to effectively use these technologies for teaching and communicating with students beyond the classroom setting.
- Overall, majority of the respondents are concern over the issue of using MIM applications to communicate with students because they perceive that students will disrupt their privacy. One respondent who appeared to be accepting of MIM applications used the word "tolerable" when she described that she was able to manage students' expectations and responses through MIM applications beyond working hours.

A total of 80 codes emerged from the first phase of initial coding, in which I engaged in line-by-line coding of the 3 interviews from the pilot study (see Appendix 4). I proceeded to restructure my interview questions upon conducting initial coding on the pilot study's data. Charmaz (2006) highlighted that line-by-line coding helps the researcher to look at the data critically and analytically while leading to development of theoretical categories from the data. Table 4 shows a list of restructured interview questions after the process of initial coding from the 3 interviews that were conducted in the pilot study. I continued to recruit more participants (P4 to P6) through a snowball sampling method and collected more data for the initial coding analysis. Subsequently, I compared data to data, codes to codes, and data to codes while maintaining an openness in interpreting what was happening in the data.

Table 4: Restructured Interview Questions After Pilot Study

1.	What are some of the MIM applications that you use to communicate with students?
2.	What do you think are students' expectations of you in terms of using MIM applications after classroom hours?
3.	How do you view the functions of MIM for teaching and communicating with students beyond the classroom setting?
4.	Have you had students who asked you for your mobile number? Why do you think they asked or did not ask for your number?
5.	When do you use MIM applications to communicate with students?
6.	What is your opinion on using MIM applications to communicate with students outside of the classroom?
7.	What is the reason for using MIM applications to communicate with students outside of the classroom?
8.	What topics do you discuss with students while using MIM applications to communicate with students outside of the classroom setting?
9.	What are the challenges of using MIM applications to communicate with students beyond the classroom setting?
10.	Can you tell me about an experience that you have had in using MIM applications to communicate with students after classroom hours?
11.	What was your experience of using MIM applications with students in teaching?
12.	What are the challenges of using MIM applications in teaching?
13.	What are the benefits of using MIM applications in teaching?
14.	How has MIM impacted the instructor-student relationship for you?
15.	What is your expectation on students should they use MIM applications to communicate with you beyond the classroom setting?
16.	How does using MIM applications to communicate with students beyond classroom hours affect your personal life or schedule?
17.	How has the institution supported you in the adoption of MIM applications for teaching?
18.	What are your expectations on the institution's role in encouraging the use of MIM applications (e.g. MIM applications) in your profession?
19.	How willing would you be to use a mobile device that is given by the institution to respond to students' queries beyond the classroom setting or after office hours?
20.	If you are using MIM applications, what would motivate you to continue using MIM applications to communicate with students after classroom hours? Why?

Charmaz and Thornberg (2021) emphasised the importance of the iterative process in accordance with CGT, in which the researcher should move back and forth between gathering and analysing data throughout the process of understanding the phenomenon through interviews. I attempted to code P1 to P6 line-by-line again, to ensure that my personal biases were not part of the codes that emerged from the data. The second attempt of initial coding through line-by-line analysis of 6 participants' data (P1 to P6) yielded 83 initial codes (see Appendix 5).

3.6 Focused coding

The second phase of coding involved constant comparison between data to data, which is called focused coding (Charmaz, 2006). Charmaz (2006) noted that focused coding is more 'directed, selective, and conceptual' (p.57). In this process, I sifted through initial codes and identified significant codes to maintain so that I could use the codes for comparison with additional data that I would be collecting.

Upon conducting initial coding on responses collected from P1 to P6, several themes emerged from the data (see Figure 3). Two main factors (i.e., political and cultural) that influenced participants' willingness and unwillingness to adopt MIM applications with students were reflected in the themes. Themes are the outcome of coding, categorising and reflecting on data from initial coding (Saldana, 2013).

Upon enhancing the interview questions from the initial coding stage, I continued interviewing participants (P7 to P12) to obtain further insights through snowball sampling. I also asked participants who had joined the study to recommend their network of contacts to participate in this study as I continued with the process of focused coding.

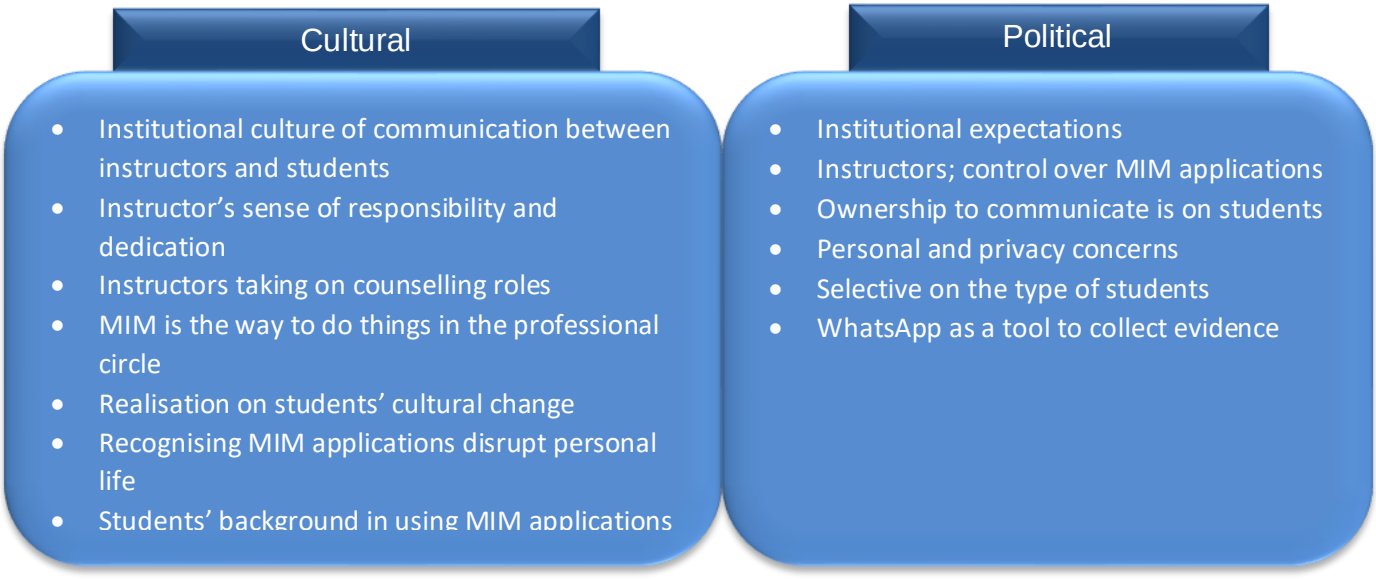


Figure 3: Themes from Initial Coding

Upon reflecting on the data collected for the pilot study, and analysing the data line-by-line, I refined and improved on the interview questions (see Table 5). I wanted to ensure that subsequent samples were able to address the research questions in this study and further enhance my interview questions to confirm the themes (i.e. political and cultural influences) that emerged from initial coding.

Table 5: Restructured Interview Questions After Initial Coding

1.	What are some of the MIM applications that you use to communicate with students?
2.	How do you handle students who ask you for your mobile number so that they can contact you through WhatsApp?
3.	When do you use WhatsApp to communicate with students?
4.	Why do you use/ do not use WhatsApp to communicate with students after classroom hours?
5.	What do you think are students' expectations of you in terms of using WhatsApp to communicate with you after classroom hours?
6.	What do you think of students who WhatsApp you to ask about assignments after office hours?
7.	What do you think of students who WhatsApp you to discuss about other topics that are not related to the assignment after office hours?
8.	How do you respond to these students?
9.	How do you cope with students who WhatsApp you instead of going through official platforms such as emails?
10.	What topics do you normally discuss with students on WhatsApp?
11.	How do you view the functions of WhatsApp for teaching?
12.	How do you use WhatsApp for teaching?
13.	What are the challenges of using WhatsApp for teaching?
14.	What are the benefits of using WhatsApp for teaching?
15.	What are the challenges of using WhatsApp to communicate with students beyond the classroom setting?
16.	Tell me about an unforgettable experience that you had in using WhatsApp to communicate with students after classroom hours. How did that experience change your opinion towards using WhatsApp to communicate with students after office hours?
17.	In your opinion, how has WhatsApp affected the instructor-student relationship for you?
18.	How have you coped with the usage of WhatsApp for personal versus professional usage?
19.	What is your expectation on students should they use WhatsApp to contact you after office hours or beyond the classroom setting?
20.	If the institution were to enforce the usage of WhatsApp between instructors and students, what would be your opinion on this?
21.	How would the enforcement affect your career or personal life?
22.	How would you expect the institution to support you should they enforce this policy of using WhatsApp to communicate with students?
23.	How willing would you be to use a mobile device that is given by the institution to respond to students' queries beyond the classroom setting or after office hours?
24.	How would you ideally manage communications with MIM applications in the future?

As I continued to recruit P7 to P12, I went back to conduct initial coding line-by-line on the 7 participants (i.e., P1 to P7) to confirm the themes and factors (i.e., political and cultural factors) that appeared to influence participants' willingness to adopt or not adopt MIM applications with students, as well as factors that influenced their adaptation towards using or not using MIM applications with students. These participants provided information for me to obtain a complete picture of the research arena and I was able to further analyse the data to see patterns in the coding process (Rubin, 2012). Charmaz (2008) stated that line-by-line coding promotes greater trustworthiness and reduces the researchers' likelihood of implementing personal biasness or values into the collected data. Thus, I felt that it was essential for me to continue with line-by-line coding even though I had moved into the focused coding stage. In the process of coding the data line-by-line, I also used NVivo to record reflective memos as categories (i.e., Unwilling, Unwilling but use, and Willing) began to emerge (see Figure 4).

I viewed the interview transcripts in NVivo and manually coded while using Nvivo to organise the codes, as it would require more time for me to acquire advanced skills in using NVivo to conduct the coding (see Appendix 6). Furthermore, the process of thinking and integrating memos with the data require the researcher to think, in which the software cannot think for me but help me see what I have been thinking (Charmaz & Belgrave, 2012). Upon obtaining the themes from the initial coding, I began to conduct focused coding. Throughout the process of focused coding, I maintained a reflective stance and used NVivo to record analytic memos. Saldana (2013) posited that analytic memos help keep track of the evolution of the study, hence, helping the researcher to understand a phenomenon. As I proceeded with focused coding, memo-writing helped me engage with the data and develop analytical categories (see Appendix 7).

Focused coding entails pursuing a selected set of central codes through the data set for further constant comparison between memos and initial coding (Sbaraini, Carter, Evans, & Blinkhorn, 2011). Focused coding is also more selective and conceptual than initial coding (Thornberg & Charmaz, 2013a). As

I engaged in constant comparison between data and data, as well as data and codes, new categories were formed, renamed and modified. I used Microsoft Word to note the explanation of emergent categories as well as memos from my reflection of the codes.

A total of 9 additional participants (i.e., P7 to P16) were recruited as I continued to move from initial coding to focused coding. In the process of conducting initial and focused coding, I went back and forth in comparing codes that emerged from the initial coding process, as well as themes that began to form in the focused coding process. I was aware of my personal bias. Hence, I also contacted participants after conducting the initial coding process (P1 to P12) to ensure that I had interpreted the data according to what participants meant and to validate the data that I had collected. At the focused coding stage of data collection (P13 to P16), 3 categories of participants (i.e., willing, unwilling in principle, used in practice, and unwilling to use MIM applications) were formed (see Figure 4).

Figure 4: Categories of Participants

Furthermore, themes that influenced participants' willingness to adopt and adapt to using MIM applications began to collapse and converge (see Figure 5). Developing inductive categories through systematic data analysis is part of the process in CGT. The researcher constructs new data collection methods and revises earlier ones to ensure that data collected are not biased and forced into preconceptions but rather, leading the researcher to unforeseen directions (Thornberg & Charmaz, 2013). I also engaged in the constant comparative method while conducting focused coding to ensure that the constructed codes were open to modification and refinement. Thornberg and Charmaz (2013) stated that openness and flexibility for more than one

significant initial code are necessary in the constructivist position of grounded theory, as the researcher decides on the adequacy of codes in focused coding. Thus, I moved from focused coding to theoretical coding as I conducted theoretical sampling upon identifying key themes that emerged from initial and focused coding, which formed the theoretical lenses of my study.

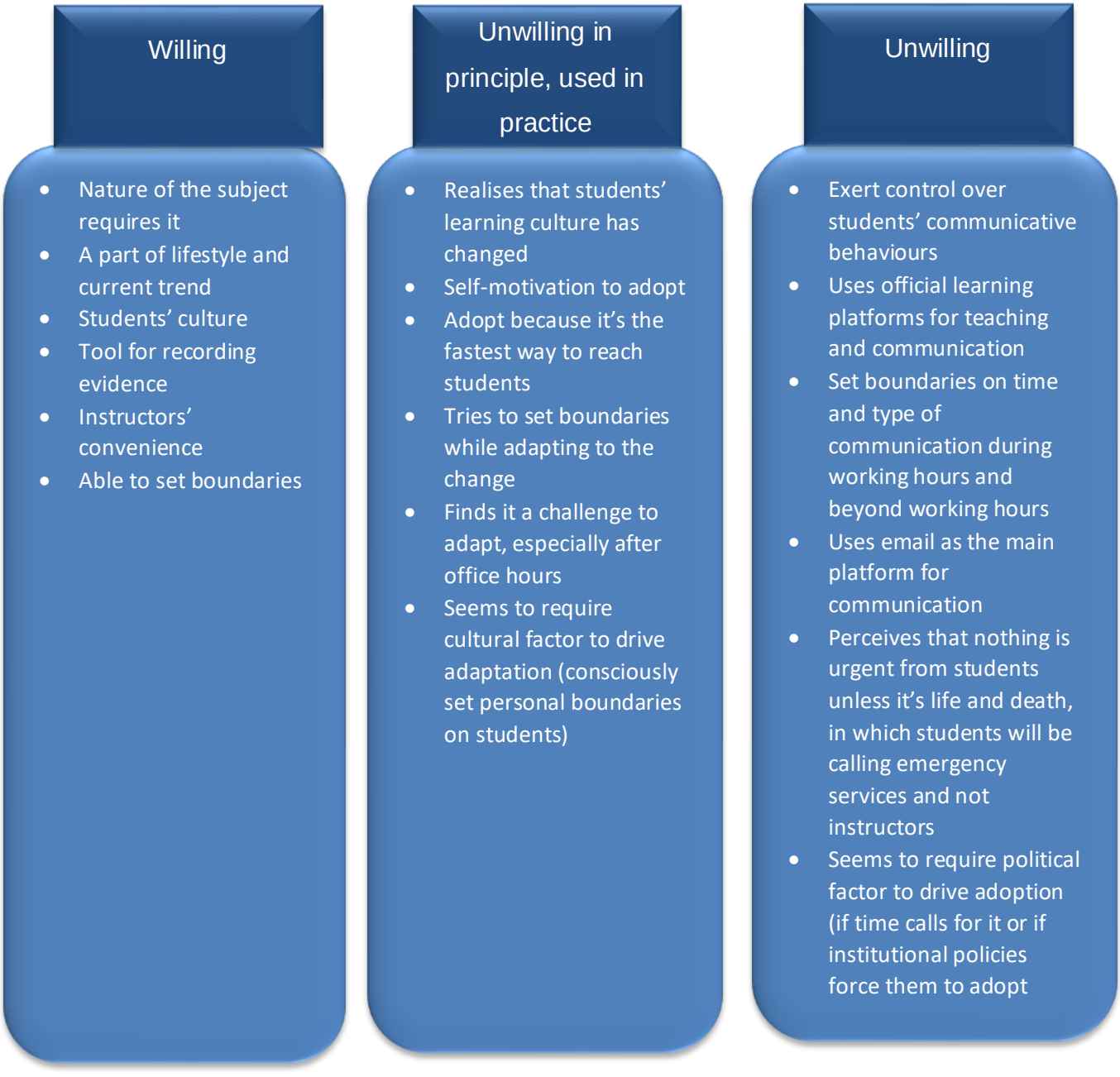


Figure 5: Converging Themes Within 3 Categories of Participants

3.7 Theoretical sampling and theoretical coding

As I merged initial and focused codes through the constant comparison method, themes began to emerge. This process is inherent in CGT, as the inductive approach aided me in generating the analysis for theoretical codes (Thornberg & Charmaz, 2013). Moving from inductive to abductive reasoning helped me form theoretical codes that emerged from the data, as abductive analysis required me to return to the field and gather more data to check and refine the categories (Charmaz, 2008). Upon integrating initial codes and focused codes, themes were identified to form theoretical codes. An example of a theoretical code that was formed in one of the categories of participants is shown in Figure 6.

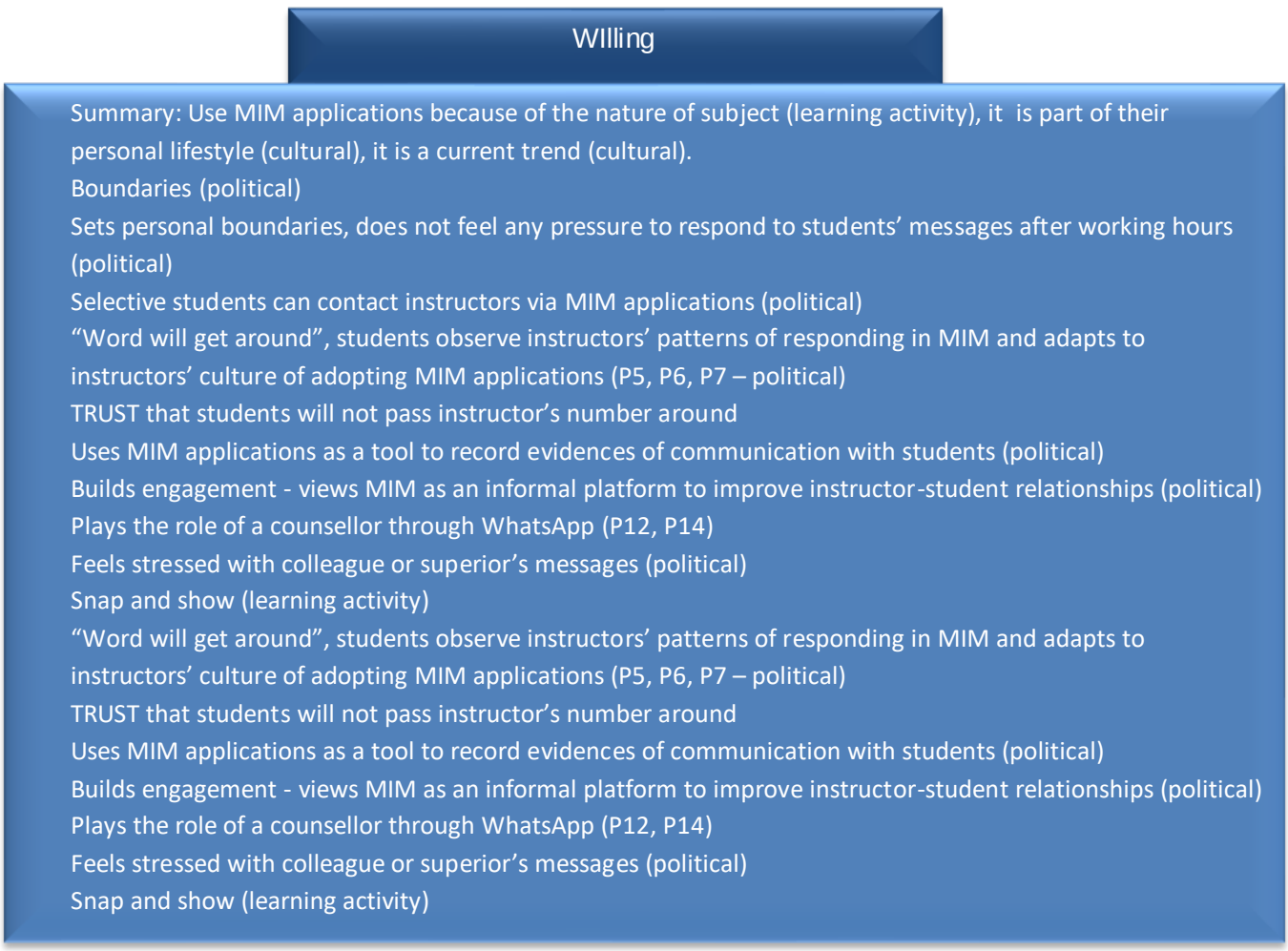


Figure 6: An Example of Theoretical Coding for One of the Categories

I continued to conduct theoretical sampling and an additional 4 more participants (P17 to P20) helped reach theoretical saturation as I simultaneously conducted theoretical coding in the midst of collecting data (see Table 1 on Stages of Coding). Theoretical sampling enables the researcher to engage in data collection for generating theory. The process involves simultaneously collecting, coding and analysing data after constructing a tentative theoretical category (Thornberg & Charmaz, 2013). The abductive analysis enabled me to see a pattern of factors that influenced participants' willingness to adopt and adapt to using or not using MIM applications with students. At this point of data collection and analysis, 3 categories of participants were clearly formed based on the political, cultural, and learning activity factors that influenced them to adopt as well as reject the adoption of MIM applications with students. Furthermore, themes that emerged from the data reflected the political and cultural factors, which influenced participants' adaptation towards using and not using MIM applications with students.

As I began analysing the data while conducting theoretical sampling, I also recorded memos from my thought process on individual participants' responses (see Table 6). Memos are useful to integrate data and the researcher's original interpretations of data to form theories in the process of analysis (Charmaz & Belgrave, 2012). Reworking memos in the process of analysing data makes them more analytic, thus bringing empirical evidence clearer while engaging in the comparative method. Through theoretical sampling, I was able to identify clues, fill in the gaps to clarify uncertainty and test interpretations that were generated from initial and focused coding (Chun Tie et al., 2019).

While engaging in the focused and theoretical coding processes, I was conscious of my personal bias due to my personal preference and experience of not wanting to use WhatsApp with students. Hence, I reflected on the analysis at the end of theoretical coding and compared them to my memos. I also re-visited the codes to ensure that my personal biases were not forming the codes that emerged in data during the coding process. Participants whom I had recruited in this study were more willing to use MIM applications beyond

office hours. I did not dissuade participants from their positions of being willing to use MIM applications with students after working hours during and after the interviews, as I wanted the data to reflect participants' opinions instead of my personal biases.

In the next chapter, I will begin to unfold the layers of data that were analysed and findings of this study. The themes that emerged from the findings reflect factors that influenced participants' willingness to adopt and adapt to using or not using MIM applications with students, particularly after office hours. Each theme will be discussed and interpretation of participants' sentiments will be revealed in the next chapter. The process of CGT will also be reflected in the findings, whereby themes that fell into specific factors of influence will be unveiled.

Table 6: An Example of a Memo on Each Participant's Response

Regardless of instructors' willingness to use WhatsApp with students, instructors seem to have a fixed perception of how students should be using MIM applications to connect with them. This seems to resonant across all instructors' minds.

P1

- Unwilling
- Do not give students contact number
- Only uses official online learning platforms (i.e. BlackBoard)
- Direct students to use official platforms for communication
- Personal is personal, work is work.
- Set boundaries in type of communication platform with students.

P2

- Unwilling but use
- Use WhatsApp because there is no choice, this generation uses it.
- Self-motivation is the key
- Set personal **boundaries** by limiting communication with students.

P3

- Unwilling but use
- Use because students are using
- Feels stressed trying to cope
- Set **boundaries** personally and for students, rules for usage
- Played the role of a counsellor through WhatsApp

P4

- Unwilling but use
- Use because students need a different space/ platform for communication
- Thinks of giving number out to students is SOS, will not benefit them.
- Set **boundaries** for students, rules for usage
- Played the role of a counsellor through WhatsApp

P5

- Willing
- Set **boundaries** for students, rules for usage
- Use WhatsApp with students because of the nature of the subjects taught
- Don't feel obligated to reply after office hours because it's a personal phone, not company's phone. (Makes a conscious effort to set boundaries personally after office hours)
- Emphasising etiquettes for students' MIM usage with him
- Reflecting on the appropriateness of adapting to the usage of MIM applications beyond working hours
- Thinks students "study" lecturers, do not entertain unnecessary questions.

P6

- Willing
- Use WhatsApp because it's the most common app in the market
- WhatsApp is traceable and can record evidence of students' communication.
- Useful tool for broadcasting announcements to students as a tool for communication, to break the ice with students.
- Ownership and onus is on students, to check messages on WhatsApp.
- Set **boundaries** of timing with convenience to reach him.
- Nature of the subject calls for use of WhatsApp
- Emphasising etiquettes for students' MIM usage with him
- Using WhatsApp is a lifestyle for him
- Learning activity: useful tool to post videos and share information; Snap & Show; This is what I've done and how I've done it, obtaining feedback through WhatsApp
- Self-motivation is the key
- Thinks students "study" lecturers, do not entertain unnecessary questions.

3.8 Summary of Chapter 3

This chapter highlights the process of data collection. More importantly, this chapter discusses about my ontology, epistemology, and methods used to conduct this study. I have also reviewed the CGT method as well as reasons for using this method in my data collection and analysis. Furthermore, this chapter also highlights step-by-step procedure of the data collection, organisation, sampling and procedures of analysis throughout the data collection and data coding stages.

Chapter 4: Findings and Discussion

4.0 Introduction of the sections

This chapter and the following sections will report on the overview of participants' profiles that contribute to the categories of participants in this study, will report on findings, as well as discussion of responses recorded from the participants. The approach of using CGT analysis will be presented in this chapter. Interview excerpts will be used to connect participants' responses and the process of exploring their experiences in this study. Themes that emerged from the data reflected factors (i.e., cultural, political, learning activity, and technical) that influenced participants' willingness to use or not use MIM applications with students. Furthermore, the themes highlighted in the following sections also reflected the factors that influenced participants' adaptation towards using or not using MIM applications with students. Each participant was labelled anonymously using a pseudonym (i.e., P1 to P20) to protect the participants' identities and privacy.

Findings of this study will be accompanied by discussion, which is deemed necessary, so that the context of each category of participants (i.e., willing, unwilling in principle but used in practice, and unwilling) can be clearly captured and understood in lieu of the themes and factors (i.e., cultural, political, technical and learning activity) that influence participants' responses towards the adoption and adaptation of using or not using MIM applications with students after office hours. Furthermore, providing a discussion while reporting on the findings of this study will avoid repetition in subsequent chapters of this study. Thus, the discussion is linked with the findings for the purpose of clarity and organisation.

4.1 Overview of participants' profiles

This study takes evidence from 20 participants; all are instructors who are teaching in private and public HEIs in Malaysia. A total of 7 males and 13 females were recruited in this study. Participants' academic positions ranged

from lecturer to professor, teaching Bachelor degree to Doctoral degree programmes. Participants' specialisation and background were from the fields of science, humanities, social sciences, art and design, as well as mathematics. The participants had an average of 10 years of teaching experience in HEIs. Table 7 displays the profile of each participant.

Table 7: Profiles of Participants

Participants	Gender	Academic position	Type of Institution	Years of teaching experience	Area of expertise
P1	F	Senior Teaching Fellow	Private	15	Business
P2	F	Lecturer	Private	14	Social sciences
P3	F	Senior Lecturer	Private	8	Mathematics
P4	F	Lecturer	Private	7	Arts
P5	M	Lecturer	Private	10	Social sciences
P6	M	Lecturer	Private	21	Arts
P7	F	Associate Professor	Public	15	Sciences
P8	F	Professor	Public	19	Sciences
P9	F	Associate Professor	Public	8	Sciences
P10	F	Senior Lecturer	Public	4	Sciences
P11	F	Associate Professor	Public	7	Sciences
P12	M	Senior Lecturer	Public	2	Sciences
P13	M	Senior Lecturer	Public	3	Sciences
P14	F	Lecturer	Private	20	Social sciences
P15	F	Senior Lecturer	Private	4	Sciences
P16	M	Lecturer	Private	10	Social sciences
P17	M	Professor	Private	15	Sciences
P18	F	Senior Lecturer	Public	2	Sciences
P19	M	Professor	Private	20	Arts
P20	F	Associate Professor	Private	15	Humanities

4.2 Constructivist Grounded Theory analysis

According to Charmaz (2008; 2020), CGT encompasses the researchers' lenses on 'what is happening in the research field' (p.165), and allows the researcher to be a part of the research while remaining flexible with the interpretation and coding processes. In the process of analysing the data, I reflected on the memos that I had taken while conducting interviews with the participants. In addition, I also considered personal views and biases in the coding process to avoid misinterpreting the data. To ensure that data were interpreted accurately, I also verified the data by clarifying again with participants concerning instances that I was doubtful about in the coding process. The inherent nature of CGT in prompting the researcher to constantly engage in reflexivity is suitable for this study's analysis, as I am a practitioner-researcher who is exploring the phenomenon that was generated from my personal experience in the profession. Upon completing the data analysis and validity check in the coding process, four influencing factors emerged from themes of this study, which were cultural, political, technical and learning activity.

Rossman et al. (1988) posited that educational change can be viewed through 3 perspectives of influence, which are cultural, political, and technical. The pressure to adopt and adapt to the use of MIM applications can be caused by any of the factors mentioned above, including learning activity, which is a factor that can drive instructors to adopt the use of MIM applications for teaching and interaction purposes (Passey, 2010). The functions of MIM enables students to contact instructors at any place, any time. The sudden change of integrating MIM applications into teaching can create additional stress for instructors besides needing to juggle between teaching and adapting to the use of MIM applications for teaching.

As MIM applications become more prevalent in HEIs, instructors can experience an imbalance in their professional and personal lives. The tension that instructors experience in negotiating between professional versus personal time warrants further understanding to improve instructors' teaching

experiences with the invasion of new technologies in HE. This study found that each of the four factors (i.e., cultural, political, technical and learning activity factors) influenced participants in one way or another in terms of their adoption and adaptation towards using or not using MIM applications with students, specifically after office hours. In this study, it was found that each factor contained themes that emerged from the data. These themes reflected reasons for instructors' decisions to adopt and adapt to using or not using MIM applications with students. To provide a context of how each factor influenced participants' adoption and adaptation of using or not using MIM applications with students, the following section will elaborate on the definition of each factor found in the themes that emerged from the data.

4.2.1 Factors that influenced participants' adaptation and adoption

As I reviewed past literature, the concept of change in education contexts clearly involved cultural, political, technical and learning activity perspectives (Corbett & Rossman, 1989; Rossman et al., 1984, Passey, 2010). In order for HEIs to implement change and encourage acceptance of change among stakeholders at the wider systemic level, all four factors (i.e., cultural, political, technical and learning activity) need to be considered and examined to understand each stakeholder's sentiment towards the concept of change. As I reflected on the literature that I reviewed, I realised that these factors were apparent in my findings and data analysis.

The cultural perspective encompasses shared norms, practices, and symbolic meanings assigned to the use of MIM applications between instructors and students, particularly after office hours (Corbett & Rossman, 1989; Rossman et al., 1984). The cultural change in this study relates to students' learning culture, whereby mobile technologies are a norm in today's HEIs. In addition, the cultural factor in this study also related to communication practices through the use of MIM applications, whereby the MIM application (i.e., WhatsApp) is widely used in participants' lives or social network.

On the other hand, the political perspective recognises that individuals within the education system have divergent interests, which may lead to the use of power to influence change to shape new agendas (Corbett & Rossman, 1986; Corbett & Rossman, 1989; Rossman et al, 1988). The political perspective in this study focuses on the divergent interest of instructors compared to that of students in using MIM beyond the classroom setting. The desire for participants to control students' expectations and communication, particularly after office hours, is apparent from the data gathered for this study. The technical perspective examines issues related to technological connectivity and access to using MIM applications for communication between the instructor and students (Corbett & Rossman, 1986, 1989; Rossman et al., 1984, 1988).

Lastly, the learning activity perspective looks into instructor-student engagement in the course, whereby instructors utilise MIM applications as a tool to communicate, as well as provide instructions and feedback on issues or assignments related to the course that they are teaching (Passey, 2010). In this study, participants highlighted that several forms of learning activities (i.e., snap and show, think forward, this is what I've done and how I've done it, and tell me how I could improve this) drove them to use MIM applications with students. Furthermore, participants also adapted to certain learning activity through the use of MIM applications due to students' ways of learning through the MIM application (i.e., snap and show).

The analysis of this study produced 3 categories of responses towards instructors' willingness to adopt and adapt to using or not using MIM applications with students, which were: (1) willing; (2) unwilling in principle, but used in practice; and (3) unwilling. Participants in each category of response related their experiences and reasons for adopting or not adopting MIM applications with students, which appeared to fall within factors highlighted in this study. The factors (i.e., cultural, political, technical, learning activity) also influenced participants' adaptation towards using or not using MIM applications with students.

Each category of response will be illustrated in the following sections, whereby adoption and adaptation towards using or not using MIM applications with students involved political, cultural, and learning activity factors. The technical factor did not appear to affect participants' decisions to adopt nor adapt to using or not using MIM applications with students in this study. The themes that emerged from the findings are discussed in the following sections, coupled with excerpts from participants' responses in the interview sessions.

On the other hand, participants who did not adopt or adapt to using MIM applications with students cited political factors for their resistance. Instructors' ways of adapting to the use of MIM applications were also explored to better understand the 'invisible' aspect of managing relationships with students as a professional in HE. Instructors who were unwilling to use WhatsApp with students had access to WhatsApp and were contacted by students through WhatsApp. However, they insisted on using official platforms of communication with students and demanded that students adapted to the culture of not using WhatsApp to communicate for teaching and learning purposes.

As noted by Charmaz (2017), CGT analysis in this study will emphasise the studying processes and making of connections between events, meanings assigned to the events, and individuals who are involved in the events to discover that which may remain invisible in HEIs. Hence, the CGT approach that is adopted for this study is more appropriate to examine instructors' sentiments on using or not using MIM applications with students, as well as their adaptation towards using or not using MIM applications with students, as there has been a lack of focus on instructors' role as agents of change in their adaptation towards the integration of mobile technologies into their profession. The following sections will discuss each category of participants found in this study, as well as themes that emerged and contributed to the factors of influence in participants' willingness to use or not use MIM applications with students.

4.3 Willing

A total of 10 participants were willing to adopt the use of MIM applications with students after office hours. Six different themes emerged from the data, which were: (1) students' and instructors' WhatsApp use; (2) instructor-student relationship; (3) expectations from peers and superiors; (4) instructors' convenience and intention; (5) records of evidence; and (6) immediacy in feedback. These themes reflected three factors that influenced participants' willingness to adopt and adapt to using MIM applications with students, which were cultural, political, and learning activity (see Figure 7).

Each factor contributed towards participants' willingness to use MIM applications to a certain extent and they noted that the use of MIM applications with students improved their relationship with students as well as students' learning. Two factors that influenced participants' adaptation towards using MIM applications with students after office hours were *cultural* and *political*. Each factor is elaborated in the following sections.

4.3.1 Students' and instructors' WhatsApp use: Cultural

The culture of using MIM applications in students' and instructors' personal lives was an important aspect that affected participants' willingness to adopt this form of communication with students. The majority of the participants who were willing to adopt the use of MIM applications with students stated that the trend of using MIM applications is something that they cannot ignore and deny, especially with regards to the efficiency of receiving responses from students and convenience of reaching students. For example, P18 assumed that everyone uses MIM applications in today's era and MIM is a convenient way to reach another person, *"I think it's easy. I mean, everyone uses WhatsApp nowadays, right?"*

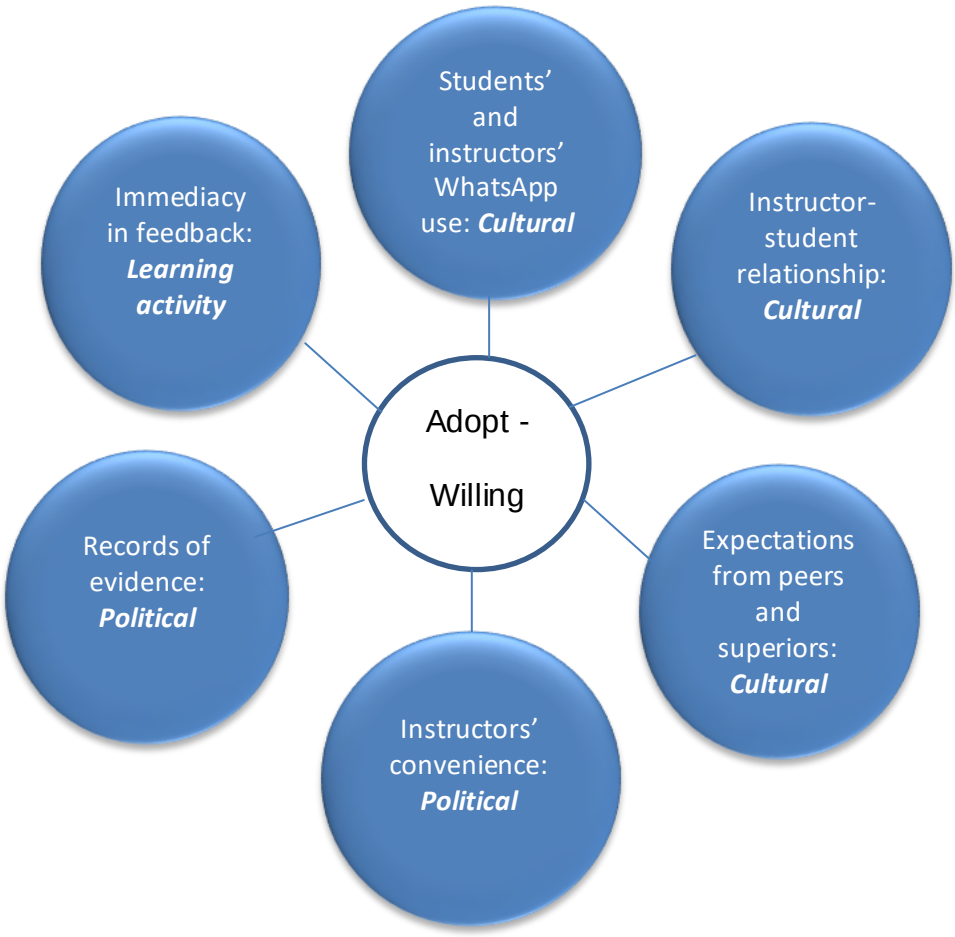


Figure 7: Willing Participants

The most prevalent MIM application that participants used was WhatsApp. Participants mentioned that they frequently use WhatsApp with their friends and family, and are avid users on a daily basis. For example, P16 claimed that he checks his WhatsApp messages every 15 minutes throughout the day, as he uses the same MIM application with his family:

> *"I check my phone like every 15 minutes… yeah… frequently checking my texts. Sometimes, it's not the students who text me but my family texts me. So, I'm worried about my family. That's why I check my WhatsApp like every 15 minutes or while I'm teaching, when I give them a break, then I will check." (P16)*

P5 echoed the same sentiment, *"I have to stay connected in WhatsApp because my family is there."* Another participant, P9, enjoys WhatsApp as she engages in active communication with her friends: *"…most of the WhatsApp is from my friends. Like group WhatsApp that has gossips, I will happily reply."* Establishing personal relationships and remaining connected in communication via MIM applications is a factor that influenced participants' avid use of the MIM application, even for communicating with students. The culture of using MIM applications to maintain close relationships is apparent in participants' everyday lives. Participants also highlighted that students use WhatsApp in their everyday interaction with others. One of the participants, P5, mentioned that he creates a group WhatsApp for a course that he is teaching besides using WhatsApp on an individual basis with students, *"…I create WhatsApp group for PRJ (final year project)… students being students, they would just text me separately on a personal (basis)*" Thus, WhatsApp was considered the fastest and most convenient way to reach students. One of the participants, P9, claimed that students are constantly online in MIM apps. She messages the class representative to send reminders to students,

> *"…those things that I leave out, ok, I message the class rep… or that needs reminder… maybe the website, students won't open that much because they will only open if they want to download something, but WhatsApp, they're always on. DING! [laughter]".*

Participants believed that conforming to the current culture of using WhatsApp is important for effective teaching and communication with students. The following excerpts reflect participants' sentiments towards the current trend of using WhatsApp:

> *"Well, famously, I'm using WhatsApp as everybody else… I felt that it is better for coordination in terms of instruction." (P5)*

> *"…it's the most common app now in the market. Everybody's using WhatsApp, right? And it's easy, accessible, right I think WhatsApp*

is important to me… there's not one day that my WhatsApp doesn't ring." (P6)

"Yes, I do. It's (WhatsApp) very good because I think it's really for us to communicate… I will respond to WhatsApp quicker than email." (P10)

"Most of the time, I'm on WhatsApp… it's unlike yesteryears, where they have to make appointments and then they will stand outside your door. No. Now, everyone is so flexible." (P14)

"…having WhatsApp just means that I don't have to inconvenience my students to come and then find a note on the door that there's no class and whatever it is… you'll find that the student actually responds much quicker and efficiently." (P17)

The trend of using WhatsApp has seeped into the culture of teaching and learning between instructors and students since the inception of using MIM applications as the primary method of communication to replace face-to-face interactions began, particularly during the pandemic (Monica et al., 2021; Tang & Hew, 2017; Yasuda, 2021). Participants indicated temporal affordances that enabled them to connect with students quickly whenever they needed. The temporal affordances that MIM applications provide appears to be an advantage for participants, as students are able to gain quicker access to resources in their learning experience (Pimmer & Rambe, 2018). Besides temporal affordances, perceived enjoyment in using MIM applications to connect with one's social network affects one's willingness to adopt the technology (Li, Chau, & Lou, 2005).

In this study, participants who were willing to adopt the use of MIM applications with students had precedent habits of adopting the technology with friends and family. Furthermore, participants perceived the culture of using MIM applications as a norm in everyday life and enjoyed the convenience that MIM applications brought for them. Thus, "jumping onto the bandwagon" of using

MIM applications with students is perceived as a cultural norm in these participants' lives.

4.3.2 Instructor-student relationship: Cultural

Successful implementations of change in a particular organisational culture requires effort to adopt and adapt (Corbett & Rossman, 1989). Participants who were willing to use MIM applications with students beyond the classroom viewed a change of behaviour on their part as necessary in order to establish closer relationships with students in the teaching and learning process. This is in line with past studies (Elhay & Hershkovitz, 2019) that found out-of-classroom communication between instructors and students are as important as interactions that take place within classroom settings, whereby instructors' out-of-classroom interactions are perceived as a constructive support for students. In addition, instructors who are student-centred will cater their pedagogical methods towards student-centred curricula despite technological barriers (Ertmer et al., 2012). Adapting to the culture of using MIM applications allowed participants to enhance their relationship with students, which in turn enhances students' learning experiences. Hence, participants viewed the MIM application as a powerful tool that should be adopted and willingly adapted to its use to create a culture of open communication in the instructor-student relationship.

Some participants emphasised that the purpose of using MIM applications is to reach students and draw closer to them so that the barrier will be broken for effective communication to take place, which will also affect students' learning. Participants viewed the adoption of MIM applications as important since the technology is a powerful tool for communication, for example, as stated by P7, *"I think it's an advantage, WhatsApp… I am accessible to them (students) any time of the day. So, I think WhatsApp is a very powerful tool for communication."* One participant, P12, indicated that only by using WhatsApp to communicate with students will a barrier between him and the student be lessened, which will ease the tension of instructor-student relationship and allow him to effectively teach students in the course:

"I still think there's still a need for that (WhatsApp) so that we are closer because basically, we always have a barrier between the students and we never have… how do I cross this barrier between a friend and everything? But now, it's just that, oh, if you want, you can just send me a text. Then it's easier to come closer to us… maybe when they're more comfortable with me, then we can talk more about science or the work and everything." (P12)

As instructors, participants also felt a sense of dedication and responsibility in effectively contributing to students' learning. Ertmer et al. (2012) stated that instructors' attitudes and beliefs towards technology adoption will influence their willingness to adapt to the use of technology. Participants in this study had a positive attitude towards adopting the use of MIM applications with students. They wanted to maintain closer ties with students by adapting to the culture of using MIM applications in teaching and learning. Li et al. (2005) noted that relationships involve attachment motivation and relationship commitment. In this study, participants were motivated to maintain closer ties with students so that students will have an open communication with them. Forming the culture of open communication by having close attachment with students through the use of MIM applications, and choosing to be committed in their roles as instructors to enhance students' learning, seemed to be motivating factors for participants' willingness to adopt MIM applications use after office hours beyond the classroom setting.

Despite the intrusion of privacy, participants acknowledged that the use of WhatsApp will go against formal rules of maintaining communication within the classroom or working hours since both instructors and students are constantly present on WhatsApp. Thus, participants were willing to put in the extra effort of adapting to the culture of using MIM applications after office hours and adopting the use of WhatsApp with students in hopes of drawing the instructor-student relationship closer. In line with past studies (Ertmer et al., 2012), technological, administrative or assessment barriers will not deter instructors from adopting MIM applications with students if they have a positive

attitude and belief towards the use of integrating MIM applications into their pedagogy.

Communication through MIM has shown to increase the level of interaction and perceived social presence amongst users (Monica et al., 2021; Tang & Hew, 2020). The following excerpts describe participants' convictions towards maintaining a positive instructor-student relationship through the use of WhatsApp:

> *"To me, as a lecturer, I want to just get information across as soon as possible… they (students) accept it because WhatsApp is part of their lifestyle. By telling them face-to-face, it may sound like you are trying to be friendly but if you were to drop it on a WhatsApp, it's a very good and useful tool to break the ice. I can see students coming out from their shell and start asking questions and things like that." (P6)*

> *"…if we make ourselves so formal, I think students will have a hard time to get connected with us. It (WhatsApp) has brought us closer… teaching is a 24-hour job… it's more like… it's a matter of shepherding, cherishing. When you take in students, you have to teach them with your heart." (P14)*

> *"I actually have a WhatsApp group for the semester. So, I set a group… I enjoy teaching and feel it's my… it's not just my professional responsibility but it's also my social responsibility to make sure that we are there for them. I think it (WhatsApp) sends a commitment that you are there for them and I think that's extremely powerful. Yeah." (P17)*

Participants wanted to share the same belief, norms, and meaning of using WhatsApp to reach students. They believed that students would be less intimidated by instructors if instructors changed their willingness to use WhatsApp with students, which would then enhance students' learning when instructors appeared to be more approachable in the instructor-student

relationship. One of the participants, P14, mentioned that students were tense in class but after he started texting them through WhatsApp, students started asking more questions in class. He highlighted the difference in students' behaviour and perception towards him as the instructor before and after he used WhatsApp with students:

> *"I do feel they are closer to me and they feel... They are like... When we start using WhatsApp, they just come to class… when they start contacting you, they feel more engaged, and you can see they are more relaxed… they feel worried being asked a question. But when we text them, even during the weekend… they will ask about something… yeah… they look more relaxed. They ask more questions because… I have a feeling they feel like they know you more, so they feel closer. So, when students learn from someone who is completely a stranger to them, they just listen… too serious, but when they feel closer, then they feel relaxed, feel free to ask questions." (P14)*

Some participants even changed their way of texting by learning and adopting students' use of language in MIM. For example, P14 stated that WhatsApp had brought the relationship closer and she had learned to adopt students' language of texting through this MIM application, *"It has brought us closer. I've learned to use their lingo… we have to learn because we may not understand what they're talking about sometimes."* As shown in other research, students' learning improves when they feel more relaxed and intimate with the instructors, as their anxiety levels decrease (Andujar, 2016; Cetinkaya, 2020).

4.3.3 Expectations from peers and superiors: Cultural

Interestingly, some participants who were willing to adopt the use of MIM applications indicated that they felt pressured to respond to the messages that they receive from superiors or peers compared to students, because they perceived that their superiors or peers expected them to respond via the same platform. The culture of responding through MIM applications between

instructors and peers, as well as instructors and superiors, seem to be an existing unspoken culture. Furthermore, participants felt obligated to respond to their superiors and peers via MIM applications so that their presence will be noticed.

Research (Dahui, Patrick, & Hao, 2005) has found that an important aspect of technology adoption is the relational aspect of interacting with another individual rather than the mere enjoyment and ease of using the technology. The more individuals perceive that their social network is adopting MIM, the higher the chances of them adopting the same. One of the participants (P12) mentioned that his superior expects every instructor to be a part of the WhatsApp group that is created for instructors to discuss about work issues and this is one of the reasons why he adopts MIM applications:

> *"…I think it's a must now, because even they (management) come to ask. The dean was just like, "Do we add everyone inside the group now?" So, it's like… so there's an academic one for faculty… everyone academician that works in this institution will be there, and then one for the department, there's another sub-group." (P12)*

A few participants noted that they would not feel pressured by students' messages but would feel the urgency to respond to their superiors' or colleagues' messages after office hours. The following excerpts reflect participants' sentiments:

> *"But if it's work-related, then WhatsApp is really stressful. If it's teaching and communicating with student, to me, it helps. But if it's work-related then people will use WhatsApp to get to us quickly and ask something quickly because... they want to get what they want, immediately and that leaves us no choice. When we open the message, then… [big sigh] I shouldn't have opened it." (P9)*

> *"They (the bosses) will tell us... they will copy the whole email and paste it in the WhatsApp group and everything. So, you probably... Yeah, you can't run away from it… and sometimes, when they are*

discussing, they will add you into the group. So, the heart is like... Okay. Okay." (P12)

"I don't feel the pressure, but when it comes to relationship with my bosses, for example, I do feel the pressure to do that… and then obviously, sometimes, this concerns me." (P17)

"Compared to students, I feel pressured when I receive WhatsApp from colleagues. Of course! [laughter] Of course!" (P18)

Participants described the feeling of being pressured to respond when it comes to messages that they receive from superiors or colleagues compared to students. The increasing connectivity that mobile technologies afford is intruding into the lives of instructors in HE. Currie and Eveline (2011) claimed that the notion of work has extended beyond the classroom setting and working hours for academics in HE. Considering that MIM applications are made for mobile devices, online presence and awareness amongst users cannot be avoided, especially with push notifications (Tang & Hew, 2017). Hence, participants are aware that their colleagues or superiors anticipate a response from them when messages are sent through WhatsApp. In this sense, social influence is a prevalent factor in affecting users' attitudes towards adopting MIM applications (Briz-Ponce et al., 2017). The unspoken rule or expectation to respond to online messages in MIM applications precedes participants' personal time after office hours.

Urien et al. (2019) also noted that the culture of using MIM applications in organisations could be driven by the fact that MIM applications promote positive attitudes towards teamwork. Thus, superiors tend to adopt the culture of using MIM applications to communicate with instructors as the perception of team efficacy on the job is influenced by perceived WhatsApp usefulness. Participants in this study also noted that their superiors and peers tend to create groups in WhatsApp to discuss about collaborative work and for information sharing. For example, P12 mentioned that he has a WhatsApp group for every meeting that he is involved in*, "It's not just the student, with the*

workmate. It's like every single meeting, you have a different WhatsApp group." Furthermore, he claimed that his peers who were more senior in age and experience love sharing information that they thought was interesting in WhatsApp groups,

> *"The ones who have been teaching for a very long time will share every single morning. It's like, "Oh, we've done this. Oh, there's a new research regarding..." Because I think maybe all those older persons, maybe it's their... Their interest is actually the science itself. They find it this is their life, this is something that really so cool they want to share it." (P12)*

Another participant, P10, noted that her superiors would share information about anticipated events through WhatsApp before sending official emails to instructors,

> *"So, I think the top management, they WhatsApp all the Deans, and then the Deans send to the Head of Department, and the Head of Department send to us through WhatsApp. They do have the official letter, but they just want to give preview of what's going to come... pre-information, pre-instruction before they release the official letter. So, they do that." (P10)*

When instructors perceive that WhatsApp is the primary mode of communication amongst their peers or superiors, they feel obligated to adopt the same communication culture and reciprocate. As stated by Avram (2017), mobile technologies will soon become a necessity rather than a choice. This cultural trend, in addition to the mass adoption of MIM applications within participants' social networks, will impact participants' willingness to adopt MIM applications for communication with students and peers as well as superiors. As HEIs move towards integrating MIM applications in teaching and learning, instructors will be expected to be more engaging with different individuals across the HEIs through the use of MIM applications (Atabek, 2020). When instructors perceive the use of MIM applications to be a norm and have a

positive view of this new technology, their perception can change their willingness to adopt the technology (Bakirtas & Akkas, 2020; Rossman et al., 1988). In this case, participants' views on the use of MIM applications was positive and a norm within the institutional practice, which affected their willingness to adopt the use of MIM applications after office hours since the MIM application also provides advantages for them to communicate with their peers and superiors.

The cultural factor is apparent in pushing participants to adopt MIM applications, as they felt left out if they did not adopt MIM applications as the main form of communication with their peers or superiors. One of the participants indicated that she willingly changed and adopted WhatsApp due to peer pressure, "*I think one of the reasons is peer pressure…." (P10).* Another participant, P9, noted that she would feel pressured if her peers use WhatsApp to reach her regarding work-related matters, "…*but if it's work-related, then people will use WhatsApp to get us quickly and ask something quickly… and that leaves us no choice*." Thus, the culture of adopting WhatsApp appears to have seeped into the higher education office culture, besides using it to communicate with students beyond office hours.

4.3.4 Instructors' convenience and intention: Political

Besides cultural factors that motivated participants to use WhatsApp with students, the political factor also appears to influence participants' willingness to adopt and adapt to the use of WhatsApp with students. Corbett and Rossman (1986) noted that the political factor "highlights the power relationship involved in altering behaviour" (p.3). Participants who were willing to adopt WhatsApp perceived their positions as instructors to be more superior and authoritative in the instructor-student relationship. As such, participants believed that they could use WhatsApp to control their communication with students and negotiate time of meetings with students. Dinsmore (2019) stated that technology affordances are ideal cases to understand negotiation of power amongst institutional actors. In this context, instructors in HEIs have more

power to determine rules of WhatsApp use beyond office hours as they expect students to obey the rules that are set by them.

WhatsApp allows individuals to hold informal to semi-formal discussions in groups, which eases communication and organisation of work (Ajjan & Hartshorne, 2008; Amry, 2014). From the political perspective, participants in this study were willing to alter their behaviour in adopting MIM applications with students due to their position of being able to set the rules of implementation in using MIM applications as a form of communication with students (Corbett & Rossman, 1986). Participants perceived students as less powerful and should obey their authority, as they set the rules of use in using MIM applications. For example, the following excerpt reflects a response from P16 in setting a cut-off time to respond to students, in which he expects students to know readily his rules of responding to their messages:

> *"They text me after office hours. Sometimes if they want to meet me during the working hours, between from 9 to 5:30, they'll text me somewhere in the afternoon or one hour before they come and see me. For me, it's okay because I'm single. I'm not married yet so it's okay if they text me even at night, I still reply. But then if they text me around like 1 or 2 in the morning, I won't reply any message at that time. After I come to work, then only I reply. My cut-off time is after 12am… because they're supposed to know that time is a time for us to sleep, not the time for us to reply… that is their problem, not our problem. We explain everything in the class, so they should know that..." (P16)*

From participants' perspectives, WhatsApp is an effective tool for them to give students instructions or make announcements at their convenience, especially after office hours. For example, P5 stated that *"I felt that for better coordination, in terms of instruction, I don't want to repeat myself, I use WhatsApp."* P17 also mentioned that he provides students access to materials as soon as he receives a message from students via WhatsApp. In addition, he

also makes last minute announcements via WhatsApp if he needs to cancel a class due to an emergency meeting,

> *"…sometimes, one student will say, "Oh, your file in the e-learn is corrupted." Then if I take the time to go and upload on BlackBoard and whatever it is, it's going to take a while. I just put it on WhatsApp. Whoever needs it, gets it. I must say, sometimes I do have to cancel my class because I do get calls by… Like 6 months ago, the Prime Minister wanted to meet the 13 of us who are part of the National Education Policy Review. I got an email at 6 o'clock in the morning to say he wants to meet me at 9, and then if I got classes, I have to inform them earlier if I need to shift it and stuff. But that's only happened maybe once a year that I have to shift my class, but having that WhatsApp just means that I don't have to inconvenience my students to come and then find a note on a door that there's no class and whatever it is." (P17)*

Besides P17, another participant (P12) also highlighted that he uses WhatsApp to notify students about meeting cancellations, which is convenient for him and also relieves students from the burden of travelling to campus for a meeting with the instructor and eases instructors' burden to organise meetings with students:

> *"It's easier for us to organise the meeting because sometimes, the students don't need to come all the way just to show you or, "I don't know what to do with this," and then they would come all the way and then schedule a meeting and then see you and everything." (P12)*

Another participant, P9, mentioned that she also uses WhatsApp to notify students about important announcements at the last minute:

> *"I prefer for anything that needs fast response, WhatsApp. For example, morning classes, maybe I will be late because of traffic jam because my class is at 8am. So, I have occasionally... in cases*

like that (use WhatsApp) … For that situation, if there is no WhatsApp, I don't know how to send out the information quickly." (P9)

Participants in this study used WhatsApp to notify students about their current state of availability or set appointments in a semi-formal manner, which is also according to participants' convenience and ease of contacting students for emergency notifications. Even though participants use WhatsApp to cancel appointments with a last-minute notice, students perceive participants as more approachable and engaging due to the informal nature that the MIM application affords. Ajuwon et al. (2018) noted that MIM applications afford constant teaching presence, whereby students feel that instructors are always approachable and readily available to address questions about the course. Furthermore, students prefer to passively receive instructions or notifications from instructors when it comes to using MIM applications (Lauricella & Kay, 2013). Thus, students' preferences resonated with participants' views on exploiting the convenience of using MIM applications to notify students about urgent meetings that participants may have or to make last minute announcements about the course. One participant claimed that she uses WhatsApp to inform her students of her availability in the office:

"It's (WhatsApp) very good because, I think, it's really for us to communicate. I don't have to call them because sometimes, they may be in class, or maybe I have a meeting or something else, so I cannot respond to them directly. If they want to come here, they just text me and then, "Doctor, are you in the room?" "Yes, you can come." (P10)

Participants negotiated the use of MIM applications with students within their power, in which they acknowledged that WhatsApp is a tool that enhances their convenience in terms of work arrangements or setting appointments with students. As such, participants were willing to negotiate the use of WhatsApp with students during informal hours, but for formal purposes due to convenience and ease of reaching students for urgent instructions or announcements after

office hours. The negotiation of power in this context provides participants the advantage of controlling communication with students according to their convenience (Rossman et al., 1984). Being in the position of power enables participants to use informal channels to instruct students and adapt to using MIM applications after office hours according to rules that are set by the participants (Corbett & Rossman, 1986, 1989). For example, P10 mentioned that she will text students after office hours if she needs to inform them about something urgently:

> *"So far, I set myself to contain myself not to text my, especially, postgraduate student, after working hours. If I do, I will say, "I'm sorry for texting you at this hour." Because sometimes, I'm afraid that I will forget for certain information that I want to inform them, so I will just... I will text them but I will make sure that I will apologize for doing that." (P10)*

The convenience experienced by instructors also benefits students and increases the closeness in instructor-student relationships. Tang and Hew (2020) noted that students consider MIM as a semi-formal platform and feel more intimate when communicating through this platform. Students are aware of instructors' presence and availability to respond, be it synchronously or asynchronously. In this case, participants controlled the use of MIM applications for formal communication purposes even though they used MIM applications with students during informal, after office hours.

Participants who were willing to use MIM applications with students, especially after office hours, also cited their intention to use MIM as a tool to improve their relationship with students. Participants' desires to improve their relationship with students, coupled with the convenience to reach students via WhatsApp appeared to be politically driven, as participants could control their communication with students at their convenience while improving their relationship with students by willingly using WhatsApp. When instructors willingly adopt the use of MIM applications with students, students perceive instructors as more approachable and instant in their teaching and learning

experience (Lauricella & Kay, 2013; Pimmer & Rambe, 2018), which is what participants in this study strove to achieve. The intention to use MIM applications to improve instructor-student relationship, even though participants had to use MIM applications after office hours, is something that participants felt worth adapting to.

4.3.5 Records of evidence: Political

In this study, participants are willing to adopt the use of MIM applications with students because they perceive that they have the power to document their communication with students and use the communication as an evidence should the need arises. WhatsApp is a useful and convenient tool for this purpose. The following are excerpts that portray participants' thoughts on the use of WhatsApp as a tool for recording evidence in their communication with students:

> *"It's traceable. Traceable, in a sense that message can be sort of like recorded as an evidence. It can be re-used, recited back as what you said or the student said, right?" (P6)*

> *"…but if it's anything formal that I want to put in words, black and white, I will usually WhatsApp." (P14)*

> *"If anything, I might send them a WhatsApp message to say, "I've sent you an email." Because usually, when I communicate with them, it's something serious or something that needs to be acknowledged that you cannot say, "Oh, I didn't scroll my WhatsApp" or whatever it is." (P17)*

Participants felt that WhatsApp was a useful and convenient tool for them to collect evidence and use the messages as proof of their communication with students. However, one of the participants (P6) did highlight that students could do the same towards instructors, whereby they record instructors' messages as proof that the instructor has mentioned certain things in the messages:

"No, we have to be very careful what we put in. Like, let's say I said, "You want to have the questions in the exam" for example. They screenshot you. "…said she will give me the questions to the exam"." (P6)

The power interplay causes participants to tread carefully in responding to students' messages on WhatsApp, even though they rationalised the behaviour of collecting evidence through WhatsApp as appropriate. The divergent interests of students and instructors is displayed through a power struggle to regulate power over the other party in the instructor-student relationship (Corbett & Rossman, 1989). Interests and willingness to adopt WhatsApp beyond the classroom setting can be determined by a balance of power among students and instructors, depending on the advantages of adopting this MIM application for teaching and learning. Participants in this study were willing to adopt MIM applications with students as their role of being in an authoritative position allows them to negotiate rules of MIM use with students.

Venkatesh, Morris, Davis, & Davis (2003) identified four constructs in the Unified Theory of Acceptance and Use of Technology (UTAUT) model, in which performance expectancy could explain instructors' intention of using WhatsApp as a tool to record evidence in their communication with students. Performance expectancy can be seen as how an individual perceives that the system will enhance job performance and provide relative advantage in making the job easier to do (Venkatesh et al., 2003). In this study, participants viewed WhatsApp as a convenient and easy recording tool to document their communication with students and avoid miscommunication. Furthermore, should participants need to use previous recorded messages as proof of communication to clarify misunderstandings, WhatsApp provides a readily available transcript of past conversations. As such, participants were more willing to adopt the use of MIM with students due to the perceived advantage of having a convenient tool to record and provide references of their past communication with students should they need a point of reference. Thus, this need to document and refer to past communication as a form of evidence is a political factor that motivates participants to willingly adopt the use of MIM

applications with students in this study. Participants view the power to obtain such evidence readily through WhatsApp as useful and convenient in helping them on the job.

4.3.6 Immediacy in feedback: Learning activity

Participants who were willing to use WhatsApp to communicate with students claimed that the MIM application was useful to teach students and to engage in some learning activities, whereby students showed them what was done and they showed students additional resources pertaining to the course content. Passey (2010) proposed six different learning activities that students will benefit from using mobile technologies for learning, which are 'review and reflect', 'think forward', 'listen to my explanations', 'snap and show', 'this is what I've done and how I've done it', 'tell me how I could improve this'. Participants in this study highlighted the learning activities of "think forward," "snap and show," and "this is what I've done and how I've done it".

Several participants mentioned that the "think forward" method of teaching students is effective with the use of WhatsApp, as they were able to post links from YouTube or other sources in the group chat and encourage students to access the materials for supportive learning. For example, P6 used WhatsApp to inspire students to "think forward" by posting online videos pertaining to the course materials that he had covered in lecture sessions. He sends students videos as additional resources for them to view and reflect upon course contents that have been covered in class:

> *"…if I see any useful video... I will just post it on a WhatsApp group. I use WhatsApp a lot to inspire… sometimes in class, you may not be able to show all this video, so you post it on WhatsApp, and I think students appreciate it." (P6)*

Another participant (P12) shared useful resources or invited students to events related to his course: *"Once in a while I'll post something as well in the group, saying that, "Oh, there's a newspaper. There's a newspaper," something*

like that. "There's an event that you guys can go and everything"." In these examples, WhatsApp is used as a supplementary tool to enhance students' understanding of the course materials. Participants believed that students will engage better with the instructor if instructors choose to use WhatsApp to share knowledge beyond the classroom setting.

As identified in past studies, learning with mobile technologies should take place from formal settings of the classroom to the informal setting of homes in order for students to benefit from learning with mobile devices (Passey, 2010; Avram, 2017). Different learning activities can be incorporated into MIM applications to generate knowledge creation and sharing, regardless of within or beyond the classroom setting. Researchers (van Rensburg et al., 2022) have found MIM applications to be useful in student assessments, as the mobile application platform generates learning opportunities, collaboration, and equity in students' learning. Thus, different learning activities through the use of MIM applications can provide benefits towards students' learning if instructors carefully design and choose the appropriate learning activity according to the functions of the mobile application platform. Students' learning can be enhanced if instructors are able to identify the appropriate use of MIM applications for certain learning activities, as students' learning culture has begun to incorporate MIM applications into learning activities (van Resburg et al., 2022).

Participants' views on the use of WhatsApp as a learning tool to disseminate information and bits of knowledge to students is consistent with past studies. The benefits of using mobile technologies have been highlighted by past research. So (2016) noted that WhatsApp allows instructors to send small chunks of information to students in the teaching and learning process, which can be less overwhelming for students. Furthermore, WhatsApp is able to store the shared materials and students are able to access the materials at their convenience. For example, P6 mentioned that he will share information that he deems useful with his students through WhatsApp, despite being out of the classroom setting:

"I use WhatsApp a lot to inspire. Posting videos of model making, assignments, and things like that. Just to post it online so that at least it will inspire them. Sometimes in class, you may not be able to show all this video, so you post it on WhatsApp, and I think students appreciate it." (P6)

Thus, participants view the MIM application as a beneficial tool to engage with students, as it is unobtrusive in classroom and accessible at any place and time according to students' convenience (Passey, 2010). Instructors also find it convenient to engage in teaching students with such mobility and share knowledge that exceeds the materials taught within the classroom.

Another learning activity that participants frequently engaged with students through WhatsApp is "snap and show" and "this is what I've done and how I've done it." These methods of learning enhance students' participation and allow them to capture images to be discussed further beyond the classroom setting, as well as present their work and receive immediate feedback from instructors for further improvement (Passey, 2010). One participant, P6, indicated that he would ask students to provide a progress report through WhatsApp by taking pictures of their assignments, *"I would want them to WhatsApp me their progress, whether they want to WhatsApp in the group or private WhatsApp, in terms of photo of their progresses."* The following are examples of how participants provide feedback to students on their assignments:

"For example, if they run a gel and they want to share the results, they just take a snapshot and send it to me… So, I would just give my review immediately. I think WhatsApp is good. You snap a photo and you ask, "Is this the right one?" or "Is this okay? Can I go ahead?" It's quite a powerful tool." (P7)

"So, my student had a problem growing her plant… she took a picture and then showed me… then, I just reply… So, I do kind of texting." (P10)

"…students don't need to come all the way just to show you… just snap pictures of it and then just show it to us, and then we can give the answer straight to the point. They capture pictures, and then sometimes, they will ask you questions that they don't have time to ask during the lectures." (P12)

Researchers (Carisma & Elma, 2020; Cetinkaya, 2017) have discovered that students have adapted to using MIM applications for learning easily and viewed it positively. If instructors were to leverage on students' use of MIM applications for learning, it could be beneficial for both the instructor and student as the application will afford more mobility and flexibility in the teaching and learning process (Bere & Rambe, 2016). MIM applications can be used as a supportive tool to enhance students' learning experiences while allowing instructors to provide instant feedback to students' assignments, which is why participants in this study were willing to use the technology to communicate with students after office hours.

WhatsApp provides a platform for instructors to provide feedback via voice, video or text messages. Students also find the use of WhatsApp for learning to be supportive, especially in collaborative problem-solving or learning (Kukulska-Hulme, 2012). Students have viewed the use of MIM applications for assessments positively due to the collaborative nature and learning opportunities that this technology affords (Bere & Rambe, 2016; van Rensburg et al., 2022). Similarly, participants in this study choose to use WhatsApp as a tool for learning activity so that students felt more engaged with the course and the instructor.

Participants in this study who used WhatsApp for teaching adapted to students' preference of using the MIM application for learning due to the convenience of searching for information and obtaining new knowledge through mobile devices. Furthermore, participants find WhatsApp to be convenient in responding to short requests or questions concerning students' assignments. Li and Song (2018) stated that the speed of response and intensity of interactivity that mobile technology affords enhances instructors' experiences in using new

technologies to teach, especially when mobile technologies are more effective in supporting instructors' teaching and pedagogical design.

Another common learning activity amongst participants in this study was "think forward". Participants were interested to be more engaged with students. WhatsApp proved to be a useful platform for this purpose. So, they used MIM applications to share videos or additional materials that would enhance students' understanding of the course materials. Several participants in this study took the initiative to share videos or events that would interest students and engage them to be more active in the course. For example, P6 mentioned that, *"…if I see any useful video… I will just post it on the WhatsApp group saying that it is something to inspire… just to post it online so that at least it will inspire them."* Another participant, P12, mentioned that he will post newspapers or events for students to participate: "Once in a while I'll post something as well in the group saying that there's a newspaper… there's an event that you guys can go and everything."

Kukulska-Hulme et al. (2009) pointed out that teaching and learning with mobile technologies should be less focused on the technology being mobile or fixed, but rather the "pedagogical interactions" (p.40) that accompany the use of mobile technologies. Mobile technologies act as a support tool to enhance the process of teaching and interactions that take place between students, the environment and the instructor. In this study, WhatsApp was found to be useful in participants' teaching, as they needed the MIM to obtain updates on students' work and provide students with additional information on the course's content.

4.4 Adapting to the use of MIM applications (Willing)

In this study, participants mentioned that students' communication culture influenced them to adapt to using MIM applications. On the other hand, participants adapted to the use of MIM applications with students by setting boundaries. Both the themes, (1) students' communication culture, and (2) setting boundaries reflected the influence of cultural and political factors that

contributed towards participants' willingness to adopt and adapt to the use of MIM applications with students (see Figure 8).

Participants noted that, culturally, students use emojis to express themselves, in which participants wanted to adapt to this culture so that students will perceive them as approachable. On the other hand, participants also highlighted the need to set boundaries in adapting to the use of MIM applications with students beyond office hours. They indicated that it is imperative to set boundaries with students to control the time and frequency of responding to students' messages, especially after office hours. The following sections provide further elaboration on the cultural and political aspects of adapting to the use of MIM applications with students.

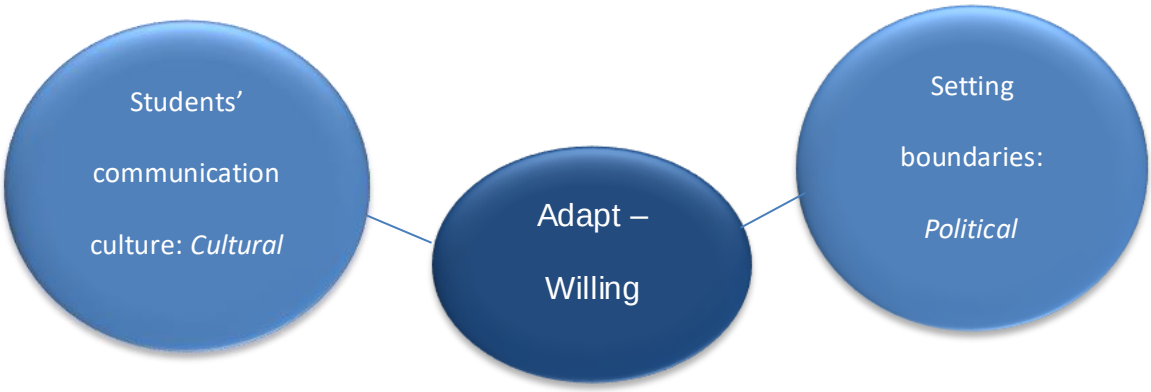


Figure 8: Adapting – Willing

4.4.1 Students' communication culture: Cultural

A few participants mentioned that they adapted to the norm of using emojis in MIM applications to communicate with students due to peer pressure as well as students' cultural practices of using emojis in MIM applications. P10 mentioned that she adapted to using emojis in MIM applications when her peers adapted to using emojis in addition to the student's culture of texting with emojis in WhatsApp:

> *"I can see that my friend just give smile, and then, "Oh, you're being very, very friendly with the students. More open-minded with*

students in terms of WhatsApp-ing." So okay… then I started giving the smile, it's fine… Yeah, they (students) do the same thing (attach emojis in messages) with me." (P10)

Adapting to the use of emojis in MIM APPLICATIONS also helps participants to respond to students when they have no comments or specific replies. P16 noted that he uses emojis to respond to students when he has no further comments to provide since it is the norm for students to expect a reply from instructors, *"Emojis... sometimes I use it because if I have no word to say, I just put a smile. That is the best that you can react rather than not saying anything or replying anything or a sticker."* The use of MIM applications require all parties to socially construct meanings in messages that are sent and received, whereby the culture of using certain forms of communication is cultivated within the context of the MIM application (Pimmer & Rambe, 2018; Tang & Bradshaw, 2020). When instructors adapt to the cultural norm of using emojis in MIM applications, they are conforming to students' texting culture in WhatsApp, which affords a more playful and approachable context. As such, communication with students for teaching and learning may be more effective with the use of MIM applications (Pimmer & Rambe, 2018; Rambe & Mkono, 2019).

One of the participants, P12, commented that it is a norm for his students to express themselves through emojis when they use WhatsApp to text him: *"…the thing is that she started using all those text messages, like all those cute emoticons… like crying… and then give me smile and then with a kiss."* Students' texting culture encompasses the use of emojis, which allows them to construct their identities by expressing their emotions in the virtual setting (Rambe & Mkono, 2019). It has been found that students relish the opportunity to use MIM applications with instructors for academic purposes, which is a culture that has pushed instructors to willingly adopt MIM applications in academia (Lauricella & Kay, 2013).

As stated by Bere and Rambe (2016), the context in which the technology is adopted is inclusive of social pressures that would cause

individuals to reciprocate similar behaviours in the use of MIM applications. Participants in this study perceived that they will be left out if they did not adapt to the culture of using emojis in their responses to students in WhatsApp. Thus, the norm and practice of using emojis are part of the culture that has been cultivated and practiced within the WhatsApp community.

Participants were dedicated to adapt to students' communication culture, as they found the adaptation to be necessary in the current HE trend of using social networking tools to communicate with students. WhatsApp has been perceived as a social networking tool by some researchers. Participants cited phrases such as *"I do take time" (P6), "I can understand" (P7), and "teaching is a 24-hour job" (P14).* Another participant, P17, believes that he should live in the culture of his profession and enjoy teaching. He felt that his role was beyond being an instructor but also encompasses a social responsibility of educating the next generation*: "So I enjoy teaching and I feel it's my... It's not just my professional responsibility but it's also my social responsibility to make sure that we are there for them."* Participants' belief and internal values generated a strong sense of dedication and responsibility, which influenced them to change their behaviours in adopting and adapting to the use of MIM applications with students, be it after office hours.

4.4.2 Setting boundaries: Political

Participants were wary of students bombarding them through WhatsApp for immediate answers. However, the majority of the participants stated that setting boundaries to depict the appropriateness and normative guidelines for using MIM beyond office hours is necessary to educate students on the etiquettes of using MIM applications. Setting rules for behavioural change is a political process, as the communication involves individuals who are in higher positions to give instructions and negotiate rules of change with relevant parties (Corbett & Rossman, 1989). Participants who were willing to use MIM applications perceived the balancing act of setting self-boundaries as well as boundaries for students as a necessity in order to effectively use MIM applications with students beyond the classroom setting.

Participants reflected on the possibility of being overwhelmed by the use of MIM applications after office hours but insisted that boundaries can be set to control students from disrupting instructors' personal lives beyond office hours. They noted that the use of MIM applications may, in fact, ease the burden of reaching students for last minute announcements or notifications about the class. Perceived ease of use is influenced by control over facilitating conditions (Viswanath, 2000). When participants perceive that they have control over current conditions of using MIM applications to communicate with students, their perceived ease of use increases. Hence, participants are more willing to adopt and adapt to the use of MIM applications with students even though it is after office hours. For example, P7 stated that she can set the boundaries and perceive WhatsApp as an advantage to control her communication with students:

> *"I can still set those boundaries and in fact, I think it's an advantage, WhatsApp. Sometimes if I'm in the midst of something busy as well, it can irritate me. If I feel irritated and I don't want to say something that I don't want to regret about it later, I'll just leave it be at that time, and then I'll come back to you." (P7)*

Another participant, P18, claimed that she is able to set a clear personal boundary. She checks her WhatsApp messages regularly during office hours but does not feel the urgency to check it after office hours to ensure that her family time is not disrupted:

> *"During office hour, I do regularly check… if it's outside of office hours and it's not urgent, I will not reply unless it's an urgent matter, then only I reply. I will make sure that my time with the phone will not affect my time with my family." (P18)*

Several participants also agreed that they do not feel the sense of urgency to reply to WhatsApp messages when they receive messages from students after office hours as they are able to set personal boundaries in managing the messages that they receive from students after office hours. The

following are examples of excerpt from participants' viewpoints on the urgency to reply to WhatsApp messages:

> *"After office hours. If I'm out shopping, I'll just look at it and just ignore. I'll just answer at later time, or I don't even answer sometimes." (P5)*

> *"I set myself to contain myself not to text my… especially postgraduate students after working hours. If I feel like I want to reply, I will just say, "Okay. I will reply to you tomorrow." Something like that. So, it depends… I will just... ignore until maybe when I feel free to respond... [laughter]." (P10)*

Even though WhatsApp can be addictive for certain individuals and indirectly creates unspoken pressure for individuals to respond to the messages (Ahad & Lim, 2014; Mouakket, 2019), it did not appear to be the case for participants in this study. Participants in this study were instructors who held more power over the MIM communication due to their positions, which allows them to be selective over the time and individuals whom they would like to respond to when they receive messages. Participants indicated that they did not feel anxious to respond when students sent them WhatsApp messages after office hours, as they would respond to students' messages immediately when they are available, or wait until they are available to respond to students' messages.

P16 commented that students should wait for his response upon sending him a message on WhatsApp instead of expecting him to wait for their messages and reply immediately, as he is not always available:

> *"They can wait because they wanted to see me, so if I'm not available, still they'll have to wait for me, right? They need to know and get my answer that I'm free. Oh, I'm free, then you can come and see me. If I don't reply, it means that I'm not free. So, they know. They have to understand that if no answers mean I'm not*

free. So, I don't feel the urgency to reply the moment you get the message from your student." (P16)

The political process involves divergent interests and roles in the relationship to negotiate power (Corbett & Rossman, 1989; Rossman et al., 1984) when instructors use MIM applications with students. Instructors do not feel the need to respond immediately when they receive instant messages since they have more power. Corbett et al. (1986) noted that implementation of change in schools often involve the political perspective, in which power relations affect the altering of behaviours in the process of change. Two participants indicated that they will reply to messages according to their feelings or mood:

"Sometimes I reply. It depends on my mood. So, it depends on my mood that day. So, if I'm happy and I'm bored, maybe I'll reply, but sometimes, it's like... Okay. Imagine I had a bad day or whatever, it's like, "How am I going to reply to that?" And then you just ignore it, and then you just reply on Monday or stuff like that." (P12)

"…but there are some cases when I was watching TV [laughter] so I feel like replying the text even when it's not urgent, I'll just reply. Otherwise, I'll just reply the next morning." (P18)

To participants, their feelings and mood supersedes students' sense of urgency in receiving messages via MIM applications, especially after office hours. The need to draw personal boundaries as well as setting boundaries for students to contact instructors after office hours is essential in participants' viewpoints in order for them to effectively use MIM applications to communicate with students. The transparent interaction that MIM applications afford is apparent when students send messages to instructors, which enhances instructors' presence of needing to be online in WhatsApp (Pimmer & Rambe, 2018; Rambe & Bere, 2013). Thus, participants adapted to the change of using MIM applications with students by setting temporal and personal boundaries in responding to students' messages after office hours.

4.5 Unwilling in principle, used in practice

Data in this study showed that a pool of 6 participants experienced the paradox of being unwilling to use MIM applications in principle but used them in practice. These participants use MIM applications to communicate with students after office hours despite their reluctance to do so. The paradox of unwilling to adopt in principle but used in practice is influenced by the *cultural, political, and learning activity* factors. Five themes emerged from participants' responses of being unwilling to use MIM applications with students in principle yet they used in practice. The themes were: (1) change in students' learning culture; (2) role of a counsellor; (3) power to control students; (4) communication with colleagues and superiors; and (5) immediacy in feedback (see Figure 9).

The *cultural* perspective encompasses shared norms and values between instructors and students in order for the adoption of MIM applications to take place, whereas the *political* perspective involves divergent interests between two parties in a power interplay (Corbett & Rossman, 1989; Rossman et al., 1984). The *learning activity* factor encompasses forms of activities that enhance students' learning through the use of MIM applications, which were "snap and show" and "tell me how I could improve this.

Participants who experienced the paradox of being unwilling to use in principle but used in practice believed that WhatsApp should not be an official platform for students to contact them, especially after office hours. However, participants acknowledged that WhatsApp provides an easy platform for students to contact them and *vice versa*, as students' culture in today's HEI has changed to adopt mobile technologies in their everyday lives. Hence, the paradox of being unwilling to adopt MIM applications with students but used in practice highlights the 6 participants' sentiments on the struggles that they experienced with the adoption of MIM applications in their profession. The same factors (i.e., cultural and political) also contributed towards participants' adaptation of using MIM applications in practice despite their unwillingness to use it in principle.

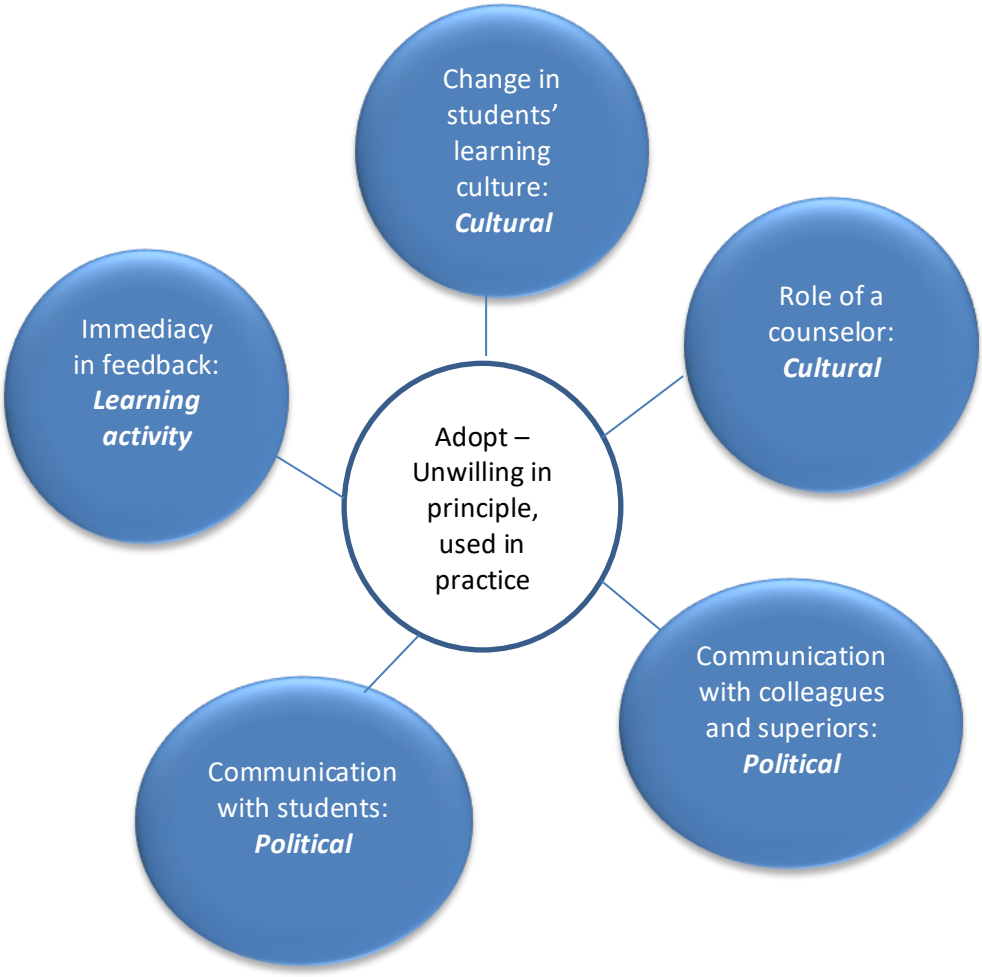


Figure 9: Unwilling in Principle, Used in Practice Participants

4.5.1 Change in students' learning culture: Cultural

Participants acknowledged that students' culture of learning and communicating with instructors has changed, which affected their decisions to adopt MIM applications even though they would prefer not to use personal mobile telephone numbers for communicating with students or work purposes. For example, P2 and P11 observed that students in today's HEIs preferred to communicate with their peers via MIM applications, which is supported by other researchers' findings (Montag et al., 2015) that found that younger individuals tend to have longer hours of daily usage on WhatsApp. Therefore, instructors claimed that they had no choice but to adopt and adapt the same culture for effective communication with students.

"I've realised that with the student generation getting younger and more exposed to technology, you have NO CHOICE but to convert, and adapt, and adopt, you know." (P2)

Different generation, different era… they (students) check WhatsApp more often because that's how they communicate with their friends." (P11)

WhatsApp also appears to provide a pleasant environment for students to communicate with instructors (Bouhnik & Deshen, 2014), which is why participants chose to still use WhatsApp to communicate with students even though they were unwilling to use it in principle. Participants in the above excerpts noted that students perceive WhatsApp as a platform that is less formal and instructors are perceived to be more approachable to students on this platform. MIM applications are found in other studies to be less intimidating for students to connect with instructors (Rosenberg & Asterhan, 2018; Tang & Hew, 2017).

Participants' willingness to adopt WhatsApp to communicate with students after office hours has been reported to create a comfortable and relaxing environment for students' learning (Bouhnik & Deshen, 2014; Cetinkaya, 2020). Thus, the culture of using MIM applications drove participants to adopt the use of MIM applications with students despite their reluctance to do so. Pimmer and Rambe (2018) noted that MIM applications create a personal space, which allow students to express themselves freely and use informal language in their communication with instructors. The use of such virtual personal space also enhances the feeling of intimacy and closeness between the student and instructor.

In line with findings from Elhay and Hershkovitz's (2019) study, participants experienced the paradox of perceiving MIM applications as inappropriate for professional use, yet wanting to use MIM applications with students due to its popularity as a form of communication. Doering et al. (2008) noted that one of the reasons for instructors' reluctance to adopt the use of MIM

applications with students in principle may be due to the lack of boundaries that exist on these mobile application platforms. For example, P11 recalled her experience of sharing her personal mobile number with class representatives and asked them to be discreet about sharing her number with other students. However, the class representatives did not adhere to her instructions. Therefore, she commented that the experience was annoying, "*…some class reps are not very discreet and go and share all around… once they share, it was a bit annoying*." Despite feeling annoyed, P11 mentioned that she will continue using MIM applications with students because she perceives the use of WhatsApp as an effective tool to enhance her teaching, especially when students provide more information via the MIM platform, "*…sometimes you want more information because in order for you to have effective teaching and learning, you need to understand their part. So, when using WhatsApp, you know the lingo that they use*."

4.5.2 Role of a counsellor: Cultural

Participants perceived that WhatsApp creates a safe space for students to seek help and consult instructors, regardless of time and space. Participants wanted to be more engaged with students and assimilate into the students' learning culture, which has changed with the use of mobile technologies in HE (Al-Emran et al., 2016; Alturki & Aldraiweesh, 2022; Badwelan et al., 2016). Participants noted that cultivating a culture of being engaged with students is important and this can only be achieved through trust and bonding in communication. Since students are avid MIM users and feel more comfortable in using MIM applications to communicate, participants felt the need to adopt and adapt to the students' culture for effective communication in their profession. A few participants mentioned the need to adapt to the students' culture of using MIM applications, even after office hours, so that they could provide further advice or guidance to students:

> *"There are two cases. Like either one cases, they really want to have their own privacy about their project and their achievement, and sharing what they are doing and how to go about it. Or if they*

will have a personal issue. I've done counselling through WhatsApp." (P4)

"Basically, I tell them, "You can ask me... This (WhatsApp) is mainly for the study purpose, but if you have any personal problem, if you're depressed or anything, feel free to come to me, I'm willing to help you as well." I use WhatsApp and WeChat. I use Instagram. I use Facebook. Anything, yeah… it's just still the same platform that they can connect to me." (P13)

"I think when you are in their comfortable ground, they tend to tell you more…" (P15)

Besides the convenience that WhatsApp provides in reaching students, the MIM application has provided a culture of encouraging self-disclosure and sharing between students and instructors. P4 indicated that WhatsApp is a safe zone that allows for personal conversations and intimacy to reach the instructor for personal matters, especially for shy students, *"I feel the students here are very shy to ask questions in public… even when I've been very approachable, my door is always open for everyone, but still they are very shy and they will prefer to use the app (WhatsApp)."* Rosenberg and Asterhan (2018) noted that WhatsApp's text-based function encourages contact and intimacy due to its asynchronous nature, which mitigates feelings of shame for certain people. Another participant (P13) also indicated that students would contact him on a personal basis as they do not want other students to know, *"sometimes they need urgent advice, or sometimes they don't want other students to know that they are contacting me regarding this and that."*

A few participants expressed that they had to take on the role of a counsellor in their WhatsApp communication with students due to some students who needed immediate attention. The participants described these students as "having a hard time" or having emotional issues, which resulted in instructors feeling the need to respond to these students' messages immediately. The following excerpts describe participants' experiences of

replying to students' messages immediately after office hours when students appeared to be emotionally distraught or depressed:

> *"…depression is very common now, especially among these kids. They have a tougher world now with social media around. Every year, you have one or two (students) like that. So, if that (student's messages) come on Sunday, of course I will reply. You have to tread the water carefully because anytime, they can jump bridges." (P11)*

> *"I've done counselling through WhatsApp. This student was having a bit of a hard time… it depends on what's the situation. How private is it? Is it about their personal life? Maybe challenge with parents? So yeah, it depends. Yeah. I will (respond after working hours)." (P4)*

> *"Counselling? Ok… counselling… yes. I have once… the student was my mentee. I was her mentor. She texted me about her problem… that time was semester break. I need to give her guidance… I replied her immediately… yeah." (P3)*

> *"She did ask for my number but I did not give. Then, she somehow found… then she messaged me, but then, I did it out of concern because the student cannot cope with things… so I did pay attention to her." (P15)*

One of the participants in the above excerpts, P11, noted that mental health issues are common amongst HE students and is embedded within the student culture by saying that *"…depression is very common now, especially amongst these kids."* This statement reflects participants' beliefs that the current generation of students often face such mental health issues and participants felt responsible to take on the role of a counsellor to address students with depressive symptoms or personal issues, as students trusted them to share personal issues via WhatsApp. Researchers (Hamidi & Chavoshi, 2018; Lee, 2016) have found that students become more engaged in

their conversations with instructors via WhatsApp in addition to increased levels of trust towards their instructors when using this medium of communication. Students favoured using WhatsApp to reach out to instructors, which creates a positive effect on the culture of using MIM applications in higher education as this medium may decrease students' anxiety and increase their motivation to learn (Cetinkaya, 2020). As such, MIM applications provide a platform for students to share with instructors about personal issues without feeling intimidated, compared to face-to-face meetings.

Participants who responded immediately in WhatsApp wanted to maintain contact with students who had personal or mental health issues, yet these interactions also call for boundaries after office hours. Battard and Mangematin (2013) noted that individuals with such idiosyncratic behaviour de-contextualise roles of people who are close to them yet maintain a boundary in their interactions on MIM applications. Participants engaged in role enactment as an instructor and counsellor when they received students' personalised messages requesting for support.

Individuals can sometimes transport the environment and enact in the role in which they belong with mobile devices, as they "carry" their classrooms with them beyond the physical classroom setting. Battard and Mangematin (2013) noted that 'distances become idiosyncratic and no longer geographical' (p.236). Therefore, instructors become students' confidantes and counsellors as MIM applications blur the lines between the formal and informal, especially using MIM applications after office hours and beyond the classroom setting. However, participants in this study were also reluctant to share their personal time with students for fear of being overwhelmed.

4.5.3 Power to control students: Political

The paradox of being unwilling to adopt in principle yet use in practice is also influenced by the political factor, in which participants experience a power struggle to gain control in their communication and relationship with students. Participants also wanted to control students' behaviour of using MIM

applications beyond office hours, whereby they think that students should be taught the etiquettes of using MIM applications after office hours. For example, P11 mentioned that students do not respect her time nor communicate appropriately through text in WhatsApp. She had to teach them how to use appropriate language in writing to her via WhatsApp as well as the time to contact her:

> *"In WhatsApp, they will automatically treat it like a very light communication and they don't write properly. All the short forms. Everything's all informal. But then time... time... when they message you, the time. How do they respect your time… Sometimes they don't have proper salutations, like "Hi". Right? "Are you coming today?" Like, "Who are you? Am I coming where?" Obviously, I will delete spam. If that's kind of scary question, like no hello, and I don't even know you... "Are you coming today?" Like, who are you? I thought people would be like wrongly message me so I will just ignore." (P11)*

In the process of negotiating who has the power to decide when to use MIM applications after office hours, instructors and students engage in a power interplay of divergent interests (Corbett & Rossman, 1986). Instructors view after office hours as personal time yet they want to be able to reach students for last minute or urgent announcements, whereas students perceive that instructors should be easily reachable with the convenience of WhatsApp, regardless of time and place. Participants in this study noted that using WhatsApp after office hours provides ease of reaching students for last minute announcements or instructions. However, participants also face the dilemma of not wanting students to contact them after office hours so that they can maintain personal time beyond office hours. Instructors' intentions to use MIM applications can deviate from their actual usage (Ajjan & Hartshorne, 2008; O'Bannon & Thomas, 2014). The paradox that participants experience relates to their intention of wanting to use MIM applications in their profession, out of convenience of contacting students, yet not wanting to use MIM applications

due to their perception of using WhatsApp for socialising purposes in their personal lives.

Participants who were in the category of unwilling in principle but used in practice were student-focused, which resulted in them relenting to using MIM applications with students. On the other hand, participants were reluctant to adopt MIM applications with superiors but had to due to the convenience of adopting MIM applications for work-related discussions. This finding is consistent with a study that was conducted by Ali et al. (2019), whereby academics preferred to use WhatsApp for official communication with colleagues but not superiors. Participants in my study felt that superiors exerted control over them and influenced their decision to use MIM applications, despite their reluctance to do so. For example, P11 mentioned that she was pressured to use MIM applications due to her superior's desire to use MIM applications for official communication:

> *"I feel like if you don't check, it's wrong… because we've got professional groups in the university that also text things that are not professional, during the weekend. I voiced this out in the department meeting, saying, "What's the purpose of the department WhatsApp? Is it for ease of transfer of announcement news tasks or something like that? Or is it a personal group?" And they (the department) decided that it's going to be mixed, which I don't like… I hate it when the boss is giving information… the information doesn't really trickle down and someone has to reply to that message… I feel the pressure to respond." (P11)*

Thus, participants unwilling to adopt MIM applications in principle but used in practice were forced to adopt and adapt the use of MIM applications due to the influence of political interests that originated from the pressure of using MIM applications with superiors for work purposes. At the same time, participants also had the intention to exert control over students' use of MIM applications for personal convenience and bonding with students. Past research (Ali et al., 2019) has also indicated that academicians were less

interested to use MIM applications with subordinates compared to colleagues, which may be due to the divergent interests of using MIM applications as a formal platform to communicate about work-related issues after office hours.

One of the factors that influenced participants' unwillingness to adopt MIM applications in principle is due to the lack of institutional support, which is political, as participants view the institution as having more power to curb students' unreasonable behaviour of contacting them via MIM applications after office hours. Participants mentioned that the HEIs fail to set clear policies for students to contact instructors via MIM applications after office hours, even though the HEI encourages participants to be more engaging with students. Participants felt annoyed with students' lack of sensitivity and boundary in contacting them after office hours, which resulted in participants setting personal boundaries for the use of MIM applications with students since they needed to contact students for urgent instructions pertaining to scheduling matters or appointments in the course. For example, P3 stated that her institution encourages instructors to use MIM applications but does not provide a clear policy for students to contact instructors after working hours:

> *"They (the institution) encourage us to contact the student through WhatsApp… They say that we can contact the student through WhatsApp, it's more convenient... especially if there is any event for the student helper group. We can actually inform the student when to meet or when to have briefing through the WhatsApp group. I think maybe they can set a guideline to the students to tell them uh... if they were to use MIM, make sure they set a limit for the timing to ask questions or… yea... to get guidance from the lecturer." (P3)*

Another participant, P4, mentioned that her institution is not supporting instructors by setting policies for using MIM applications with students. However, she needed immediacy in her communication with students. So, this resulted in her setting personal boundaries to curb the time spent on using MIM applications with students so that students will not encroach into her personal

time after office hours. She also indicated that she has the power to control communication through MIM applications, whereby she does not feel the need to respond to messages if it is not convenient for her:

> *"I don't give them (students) at the beginning, the first week. I want them to start communicating in class and break this limitation, or come to the office, or learn how to email, and request to meet. Yeah. So then, afterwards, when things get complicated or they start... Need more supervision or feedback, because when you are reaching to Week 7 onwards until the finals, you feel like they don't even have time to meet you, so they will need a way of easy communication because everybody's busy doing their assignments and so on. They're (the institution) not supporting, of course… we are using our own mobiles… yeah… but at the end, it doesn't matter for me… as a person, you create that line of privacy between whom you are communicating and how. If you draw a line and decide I don't communicate after 8pm, then you don't communicate after 8." (P4)*

Participants in this study experienced the paradox of being unwilling to use in principle but used in practice because they perceived that they have the power to negotiate, as well as set the rules and time of communication in the use of MIM applications. However, participants indicated that they would choose not to use MIM applications with students if given the choice. Participants viewed MIM applications as a personal platform to communicate and socialise rather than for professional use. Therefore, these participants felt that boundaries should be drawn between personal and professional use of MIM applications, especially after working hours. Since participants were able to exert their power and draw boundaries of MIM use with students, they relented to adopt the use of MIM applications with students for the sake of personal convenience and student engagement. The following excerpts are examples of participants' responses about their preference of not using MIM applications if given the choice:

"If asking me to teach with technology, I am ok because there are many tools to supplement the teaching. But try not to use mobile app, especially mobile apps where we need to give the students our personal contact." (P3)

"Phone is also for private, personal... I mean, MIM is also... This mobile thing is also for personal matters, right? That means I need to respond… That means I need to respond immediately, right? I need to keep my work-life balance [laughter]." (P15)

Participants stated that they would prefer not to use their personal mobile telephone numbers to interact with students, particularly after office hours, yet they found no other way to interact with students when they need to make sudden important announcements. For example, P15 stated that she uses WhatsApp to make last minute announcements to her students as she can reach them instantaneously:

"…so… I use WhatsApp… because sometimes I need urgent results, urgent reports, things like that, so I use this to communicate with them. So, other things, we have announcements, things like that, so I use this to communicate with them. Instant… I can get in contact with them quickly and monitor them." (P15)

However, when probed further about her preference of using MIM applications to communicate with students, she mentioned that she was not in favour of using the mobile telephone application for students to reach her. P15 claimed that using MIM applications with students is a disadvantage due to the lack of boundary and students abusing the convenience of reaching her at any time, any place: *"I need to maintain the distance… I think. I need to have the boundary... uh... I think students will abuse the convenience."*

Another participant, P3, echoed the same sentiment that P15 addressed concerning students abusing the convenience of reaching instructors through WhatsApp after office hours: *"I think… students normally will take it for granted… they want the… answer on the spot, immediately… especially during*

revision time, they don't know how to solve it. At night, they want the answer immediately. So, they tend to text the lecturer". These participants did not trust students to use MIM applications wisely after office hours, which is the reason for participants not wanting to adopt the use of MIM applications with students. On the other hand, participants want to be more engaging with students and feel the need to fulfil their responsibility as an instructor of the course. P3 described the feeling of being pressured when she receives a message from a student after office hours, which forces her to respond so that she fulfils her responsibility as an instructor. However, she maintains power over the student by reprimanding and reminding students of the appropriate time to send messages via WhatsApp:

> *"They take pictures of the questions and then ask me how to solve it and then said that uh... the time they ask the question is... it's actually critical... I feel like… very pressured, I feel like… stressed, because if I don't answer then, the next day there's a test or quiz, later, might affect their results... Then, immediately I will text them, "It is midnight, ok, please do not text me during midnight. As I have said, I have already told you, you can contact me anytime, but then make sure not during midnight". (P3)*

MIM applications enable students to intrude on instructors' personal time after office hours, which affects participants' willingness to adopt MIM applications. However, participants in this study noted that it would be convenient for them to reach students via MIM applications beyond the classroom setting should the need arise. The paradox of not wanting students to contact them after office hours yet wanting to reach students conveniently after office hours appears to be a tension that pushes instructors to use MIM applications in practice. This tension is reflected in the following excerpts:

> *"Speed and ease of communication will motivate me to continue using WhatsApp. Ease of communication means the ease of transmitting news and getting news… and also now, sending documents, like I just corrected a student's thesis, I feel like it's*

quicker if I send it in WhatsApp, she responds now… WhatsApp impacting my life… it's really annoying… I'm trying my best to put (a stop)… especially weekends. If they (the institution) ask me why I don't respond out of office hours, I'll say because I don't have phone allowance, right?" (P11)

"If they (the institution) has a policy to use WhatsApp as an official channel, I don't really prefer this method… too much of anything is not good… sometimes I feel that sense of urgency to respond to their messages when I receive them... a form of pressure and stress... [laughter] At the moment, I think because these industrial training students, so... sometimes... I feel like I spend too much time replying their texts." (P13)

"It's the undergrads, they did ask… I don't give them my phone number…if I have problematic students, demanding students, needs constant attention students, or cannot solve problems students, these would deter me from using WhatsApp with them. With postgrads, because I have to monitor their progress, so I have to check what are they doing, things like that. So, I use WhatsApp." (P15)

The lack of administrative and institutional support can deter instructors from using MIM applications to communicate with students despite the culture of adopting MIM applications in HE (Ertmer et al., 2012). The tension of needing the institution to impose clear guidelines on the use of MIM applications amongst students, as well as controlling student MIM use after office hours is constant in the ever-changing HE environment. With the growing culture of using mobile technologies in HE, there is a greater expectation for instructors to respond to students' requests via MIM applications, regardless of time and place. Therefore, instructors also expect institutions to execute their power by imposing policies and guidance for students' MIM use within and beyond the classroom so that there is uniformity in setting a norm that is widely known and followed within an institutional culture (Ramsay, 1991).

4.5.4 Communication with colleagues and superiors: Political

For participants who were unwilling in principle but used in practice, they adopted MIM applications due to the convenience of reaching students after office hours for urgent matters. However, pressure from superiors also caused them to adopt MIM applications after office hours. Participants did not prefer to use MIM applications with superiors but the practice became an unspoken rule, in which superiors exerted power over participants when messages were sent after office hours. Participants thus altered their behaviour, from being reluctant to adopt to adapting with boundaries, when power relations are involved in the use of MIM applications after office hours (Corbett & Rossman, 1986). Since participants were also employees and subordinates within the HEIs, their superiors exerted authority to control participants' behaviours and brought about the change of adopting MIM applications after office hours, regardless of that with students, colleagues or superiors.

Currie and Eveline (2011) noted the importance of determining who benefits from the use of technology in education when technology is changing the work and personal lives of academics. While participants felt that they could control the use of MIM applications with students after office hours, some participants struggled with maintaining control over messages from their superiors or colleagues after office hours. Tang and Hew (2017) concurred that few studies have examined instructors' perspectives and the impact of MIM applications on instructors' personal lives, which requires further understanding about the challenges that instructors are facing.

The use of MIM applications with colleagues or superiors appeared to be a political factor that affected instructors' willingness to use MIM applications in practice in my study. Participants felt that the expectations from colleagues to participate in MIM conversations after office hours is an unspoken pressure that entails their jobs. P11 expressed that she felt pressured to respond to her superiors via WhatsApp after office hours, *"whether professionals or WhatsApp affecting personal, yes they (MIM applications) do. They do. They do affect, I feel the pressure to respond, especially from the people who are superior than*

you that demand an answer." Rossman et al. (1984) claimed that informal communication is a tactic used in the political process of implementing change in institutions. Participants in my study believed that the institution expects them to be contactable, especially with superiors. P15 mentioned that her institution requires her to be contactable to students, but more so with superiors, *"It is expected that we need to be contactable to the students, especially for superiors, in case they have any problems."*

Since participants own smartphones that are equipped with WhatsApp, some institutions expect participants to engage with students through the use of such MIM applications, which are free. One of the participants (P13) indicated his reluctance to adopt WhatsApp as an official channel of communication if his institution were to use this method to deliver messages: *"If they (the institution) have a policy to use WhatsApp as an official channel, I don't really prefer this method."* He also noted that institutions have the expectation on instructors to be accessible by students in terms of communication: *"I found institutions are becoming more student-oriented. I mean, they have always been, but right now, with this communication between the lecturer and student, institutions feel that we should make ourselves more available to students [laughter]… for their engagement."*

The political factor appears to add onto participants' stress of having to juggle multiple messages from students and to superiors. Rossman et al. (1984) observed that political processes also involve reorganisation of roles and relationships. In this case, participants are required to negotiate their roles as instructors and employees while balancing the role of a spouse and a parent after office hours. Such role negotiation is stressful for participants as they need to respond to various WhatsApp messages and tasks at hand continuously throughout the day. Furthermore, participants have to respond to the dialectical tensions of negotiating time and relationship in the use of MIM applications after office hours, which requires adaptation (Pimmer & Rambe, 2018).

With the availability and mobility of MIM applications, there is no geographical or temporal barrier. Such convenience negatively impacts

instructors' personal and professional lives as the boundary between personal life and work becomes blurred (Pimmer & Rambe, 2018; Tang & Hew, 2017; Tarafdar et al., 2007; Yun et al., 2012). P15 mentioned that her superior uses WhatsApp as an official platform for communication, which was contrary to the perspective of her colleagues:

> *"Our HOD (head of department) uses WhatsApp to announce things to everyone… but then one of my colleagues brought up asking if we can choose not to respond and if they can be out of the group. He said ok. So, my colleague actually left the group." (P15)*

Some participants emphasised that they needed to maintain their work-life balance and MIM is for personal use, especially during weekends. The following reflects these participants' perspectives on the use of MIM applications during personal time compared to working hours:

> *"Phone is also for private, personal… I mean, MIM is also… this mobile thing is also for personal matters, right? I need to keep my work-life balance. [laughter] I need to maintain it." (P15)*

> *"…we got professional groups in the university that also text things that are not professional during the weekend. We shouldn't want to be bothered… come on, share it with your family. We're your colleague… that's so annoying. Your kids are really cute but it's a Saturday. I don't want to see that particular message in that group. That group should be silent over the weekend." (P11)*

Even though participants use WhatsApp to contact students over the weekend, they did not wish for their superiors to do the same to them. Participants also experienced the paradox of wanting to settle work-related questions while desiring to maintain a work-life balance after office hours. The power interplay displayed is according to the type of relationship that participants have with individuals who engage in the use of MIM applications with them beyond office hours. These political pressures affected individuals' willingness to adopt the use of MIM applications beyond office hours due to

divergent interests and the possibility of maintaining power over the communication via MIM applications (Corbett & Rossman, 1989; Rossman et al., 1984).

4.5.5 Immediacy in feedback: Learning activity

Participants who were unwilling in principle but used MIM applications in practice mentioned that they were also influenced by the convenience of providing students with immediate feedback with the use of MIM applications, regardless of the time and context. Learning activity was a factor that motivated participants to adopt the use of MIM applications with students. The two most common learning activities that took place with the use of MIM were “Snap and show” and “Tell me how I could improve this”. These two learning activities were found to be commonly adopted by students in the use of MIM applications with these participants.

In “snap and show”, students would seek immediate feedback through images that they send to participants via WhatsApp. Students could send participants their work in the form of a picture image or document. Participants found the transmission of students’ work through WhatsApp useful in allowing them to provide immediate feedback the moment they received the image or files through WhatsApp messages. Participants highlighted the benefit of WhatsApp, which allows students to capture images of their work for improvement and instructors being able to provide immediate feedback to students.

For example, P3 mentioned that her students sometimes urgently needed answers when they were working on mathematical questions. She could provide immediate feedback to the students when students sent her an image to request for assistance on the question, which helps students prepare for tests and understand the solution to the problem:

> *“They take picture on the question and then ask me how to solve it, and then said that uh... the time they ask the question is... it’s*

actually critical... if I don't answer, then, the next day there is a test or quiz… it might affect their results." (P3)

Another participant, P15, uses the same method to address students' questions*: "… postgrad students will... If they have problems, they have something to show, they will take pictures and then let me know."* She uses WhatsApp to explain and instruct students on what is required for the assignment when she receives images from students, as she finds it beneficial with the immediacy that WhatsApp affords: *"Sometimes explain to them using WhatsApp… I'll tell them what to do lah… like what I want, what kind of graph I want, then let them prepare then send to me. I see more benefits because it's instant."*

Besides "snap and show", participants also found WhatsApp to be useful in engaging students for learning activities that involved "tell me how I could improve this". Participants have highlighted the combination of both learning activities (i.e., "snap and show" and "tell me how I could do this"), which enhances students' understanding on the course materials. For example, P13 highlighted that students would combine "snap and show" and "tell me how I could do this" in their messages to him via WhatsApp so that they can seek clarification on the materials in the course:

"…we have practical classes, like Microtechniques… they use all sorts of methods to ask me, taking picture... texting... Anything, yeah... For example, they have a problem… they need to prepare the histological sections from the animal or plant tissues. So, yeah… sometimes they... you know students. Some of the students… they're really concerned about their marks… when they don't get a nice result, nice sections on the slide, like a C, so they really worry and start contacting me. So, I'm not concerned too much about you getting a very nice result because we are not going to get Nobel prize for this. What's most important is your understanding, why this happened, so you learn more." (P13)

Students are motivated to adopt a combination of learning activities through the use of MIM applications with instructors to seek support. Fryer and Bovee (2016) noted that it is essential for instructors to provide support through various forms of learning activities and feedback in the virtual learning environment. When students perceive instructors to be supportive in providing feedback via virtual learning platforms, their motivation level increases (Fryer & Bovee, 2016; Li & Song, 2018).

Participants also used WhatsApp to provide immediate feedback and assessments for students who engage in "this is what I've done and how I've done it," in which students show participants the work for further feedback and improvement. P11 mentioned that she adapted to using WhatsApp for assessing students' writing through WhatsApp in her smartphone and also to obtain immediate responses from students, which is more efficient for her: *"Now, sending documents, like I just correct a student's thesis, I feel like it's quicker if I send it in WhatsApp, she responds now."* Participants' willingness to provide feedback on students' assignments via WhatsApp is motivated by the learning activity factor, whereby the convenience of assessing students' work and synchronicity of obtaining students' responses or addressing their questions about the assignments is enhanced through the use of WhatsApp. Even though participants had to respond to students' questions and assess their work after office hours, the convenience outweighed the boundaries of personal versus professional time on the job.

4.6 Adapting to the use of MIM applications (Unwilling but used)

For participants who were unwilling to adopt MIM applications in principle yet adopt in practice, similar cultural and political factors contributed to their acceptance and adaptation in using MIM applications with students (see Figure 10). Initially, participants rejected the notion of adopting MIM use with students but resorted in adapting and adopting the technology due to these themes: (1) students' communication culture of using MIM applications in today's HEI environment; (2) the norm of self-disclosing personal issues and seeking for counselling amongst students, which compelled participants to take on the role

of a counsellor via WhatsApp; as well as (3) instructors' authoritative role that allows them to set boundaries when they use MIM applications with students. Each of these themes are elaborated with examples from participants' viewpoints for adapting to the use of MIM applications despite their reluctance to adopt the technology in principle.

Figure 10: Adapting - Unwilling in Principle, Used in Practice

4.6.1 Students' communication culture: Cultural

Participants chose to adapt to the use of WhatsApp with students, even though they disagreed with using the MIM application to communicate with students after office hours, as they find it easier to reach and connect with students if they adapted to the culture of using MIM applications. Ramsay (1991) noted that individuals may accept the change reluctantly but temporary behavioural changes do not necessarily lead to acceptance in the desired new norms. In this study, participants who were unwilling to use MIM applications adapted to using MIM applications with students due to the change in students' learning culture. However, these participants highlighted their desire to revert

back to the norm of not using MIM applications with students should they be given a choice to do so. For example, P3 stated that she would try to minimise the use of WhatsApp as she is not in favour of using it. However, she continues to reply to students' messages whenever she receives them and is available to respond:

> *"If they really ask me the question before 10pm, if I am free and I saw the message, I will actually reply them… I really don't like to have this, to use WhatsApp or MIM in my teaching, in my work life. I try to minimise it." (P3)*

Participants also cited their reluctance to share their personal mobile telephone numbers with students at the beginning of each class so that they do not have to adopt the use of MIM applications with students. However, if students have access to their mobile telephone numbers and contact them via WhatsApp, participants would also respond for the sake of answering students' queries. For example, P13 mentioned that he would not prefer WhatsApp to be announced as an official communication channel:

> *"Hopefully the institution will not enforce us to use WhatsApp officially... because I think it's going to be overwhelmed by text messages. It's going to be too many. So, I really prefer like what we are using now (the university's learning management system). Whatever discussion, forum, chat, we can do it there. So, it will not pop up any time in the midnight from your phone because you know students… If they (the institution) have a policy to use WhatsApp as an official channel, I don't really prefer this method. I really don't prefer this method because it's gonna be... I'm sure there's other ways that's more efficient." (P13)*

Corbett and Rossman (1989) noted that the context of change is important for implementation to take place effectively. If HEIs require instructors to use MIM applications for student engagement, cultivating a culture of using MIM applications in an appropriate manner and timing is vital. Instructors will

only jump onto the bandwagon if the culture of using MIM applications beyond classroom settings are in line with their personal values, as MIM applications afford almost instantaneous and constant connectivity.

Research finds that students feel more connected with instructors in the MIM world, as instructors' social presence creates stronger social influence and allows for greater affective expressions (Tang & Hew, 2020). Also, when instructors choose to use MIM applications with students, despite their unwillingness to do so in this study, students perceive instructors as more caring and approachable (Monica et al., 2021). Participants felt compelled to respond to students' messages via MIM applications, as they did not want to be perceived as being distant or disengaging.

One of the participants (P4) in this study claimed that she had to adapt to the students' culture of using MIM applications, as students need the personal space to communicate with her, even though she was reluctant to do so: *"At first when I started teaching in Malaysia, they asked me for the number. I didn't give my number… but… because of this limitation and culture behaviour of being shy to ask questions in class… that's why I use WhatsApp."* Even though participants wanted to maintain their principle of not using MIM applications with students after office hours, the culture of using MIM applications to connect and contact another person seems to prevail and pushed participants to adapt to the culture of using MIM applications after office hours.

Besides adapting to the use of WhatsApp after office hours, participants also adapted to the language used in WhatsApp while communicating with students through this MIM application. P11 indicated that she adapted to the students' culture of using their language to communicate in WhatsApp so that she can teach effectively and connect with them:

> *"I think when you are in their comfortable ground, they tend to tell you more and sometimes you want more information in order for you to have effective teaching and learning… So, when you use WhatsApp, you know the lingo that they (students) use." (P11)*

Rowan-Kenyon and Aleman (2016) noted that in order for instructors to effectively use the digital technology, it is important that instructors have the ability to understand and incorporate the culture of using technology into their teaching. In this context, participants were also willing to adapt to the language that students use in WhatsApp. P11 likened the adapting process as "tapping" into students' culture, and further elaborated on students' preference for instructors to adapt to their use of language in WhatsApp:

> *"…sometimes… the GIF… they give it to me as well. They like it… yeah... yeah. They like it… they like it when the lecturers… I think... 'cause they will consider us always as older than them, right? Different generation, different era. Maybe not different era when we are a bit younger. So, when we are trying to tap into them, like when you make this joke, for example, you can see from their messages, "Ah, she knew about..."." (P11)*

P4 mentioned that communicating with students through WhatsApp depends on the cultural background of the students. Generally, international students were more likely to approach her through face-to-face communication: *"…depends on the culture of the students you're talking to… like foreign students, they just come, approach, talk. They prefer face-to-face communication. Asian, no, Malaysians, specifically, no. Yeah."* Participants generally felt that they did not have a choice to select other forms of communication with students, as MIM applications appear to be the most commonly used application that is most effective and efficient in reaching students. The ubiquity of mobile telephones, coupled with the instantaneous response through MIM APPLICATIONS, has formed a culture of interpersonal communication between instructors and students (Tang & Hew, 2020).

4.6.2 Role of counsellor: Cultural

Participants in this study stated that they were forced to adapt to the use of MIM applications as they did not want to be perceived as being distant from students. Furthermore, participants mentioned that students needed a personal

space to interact with them, particularly about personal issues. Thus, participants in this study also took on the role of a counsellor, which appeared to be the norm in using WhatsApp for communication amongst students and instructors. One of the participants (P4) observed that students needed some zone or private room to discuss with her and it appeared to be a cultural behaviour: *"I asked them to communicate via email or call me… but then, I find the… cultural behaviour, they really needed some zone or private room to discuss with me a few matters. That's why I had to use WhatsApp."*

Another participant, P11, noted that depression is common amongst students in today's HEI settings, which is why she chose to allow students to reach her for personal issues via WhatsApp despite the time and day:

> *"…mental depression is very common now, especially among these kids, not only to us, to these kids. They have a tougher world now with social media… You wake up in the morning the first message that comes from her is like "How do you get yourself motivated every morning?" Those kinds of questions… I have to check what's going on, 'cause she keeps telling me she's so depressed. Well, every year, you have one or two like that, and then they ask you, "I don't even know how to continue waking up in the morning." Those kinds of things. So, if that (messages) come on Sunday, of course, I will reply!" (P11)*

P11 took on the role of a counsellor and adapted to using WhatsApp to communicate with students, even after office hours, so that students will have an avenue to express their feelings. However, she felt that the use of MIM applications after office hours is affecting her badly and, therefore, she made it a point to stop responding in MIM applications after office hours: *"…but whether professional or WhatsApp affecting personal life, yes, it does… it does. It does affect. I feel the pressure to respond… Weekends, I try my best to not respond."*

Besides P11, another participant, P4, also had a similar experience of adapting to the use of MIM applications after office hours and playing the role of

a counsellor via WhatsApp. P4 recalled an experience when students wanted to reach her for counselling purposes through WhatsApp: *"There are two cases... Like one case, they have a personal issue… I've done counseling through WhatsApp. Yeah… counseling. First, I started by email. Then, this student was having a bit of a hard time, then I had to ask her to also approach me through WhatsApp."* In this instance, students did not want to approach instructors in other communication platforms besides WhatsApp, which resulted in participants needing to adapt to the use of MIM applications so that they can communicate with students.

Students were willing to approach instructors, as they felt that instructors were useful in providing counsel when they disclose personal issues via MIM applications. As shown in the research also, perceived usefulness in interpersonal relationships encourages self-disclosure (Mouakket & Sun, 2019). Furthermore, MIM applications provide the necessary privacy and personal space for students to approach instructors as counsellors (Ma, Ding, Zhang, & Zhang, 2020). Participants in my study found that students needed the personal space to self-disclose their personal issues and seek counsel from someone whom they perceive can help them. As shown in another study, the MIM platform affords minimal invasion of privacy, in which students can be selective in sharing personal issues that they choose to disclose while maintaining personal information that they choose not to expose in their sharing (Rosenberg & Asterhan, 2018). Thus, participants in my study had to adapt to the use of MIM applications and appeared to be more approachable to students since students had chosen this platform to share about their personal issues.

Rambe and Mkono (2019) found that technology-mediated communication compresses authoritative hierarchies in educational settings, particularly between instructors and students. Even though participants appeared to be authoritative figures, students felt comfortable in self-disclosing personal issues due to the personal space that WhatsApp provided. Students did not have to meet with instructors face-to-face when they seek counsel or express their feelings, as MIM applications negate the authoritative hierarchy that students feel, compared to face-to-face communication. Thus, the culture

of using MIM applications to communicate with instructors had been cultivated with the factors highlighted above. Instructors felt that they had no choice but to adapt to this culture for effective student engagement.

4.6.3 Setting boundaries: Political

Cho et al. (2019) stated that individuals experience communication overload with the existence of smartphones, particularly with the use of MIM applications. MIM overload also results in burnout and fatigue. The situation of obtaining greater convenience through the use of WhatsApp yet experiencing more stress with receiving students' messages after office hours is what Yun et al. (2012) would describe as "all wired and all tired" (p.122). Even though WhatsApp is beneficial in providing instructions to students after office hours, the same benefit that is used by students towards the instructor appeared to be overwhelming for the participants in this study.

Participants also realised that they were spending too much time after office hours responding to students' messages through WhatsApp. One of the participants (P13) noted, *"Sometimes I spend… I feel like I spend too much time replying their texts."* Another participant (P15) claimed that it would be too stressful for her to respond to undergraduate students since there are so many of them*, "…because undergraduate students… the number is so many. If you are in the group chat, then you will have so many messages coming in, right? Wouldn't that make you stress? I cannot…*" When participants experience workload that exceeds his or her capacity to complete, the amount of work becomes overwhelming and stressful. This effect may adversely affect participants' performances at work (Tarafdar et al., 2007). Furthermore, an "open door policy" in MIM creates conflict for participants to distinguish personal time versus work time after office hours (Cohen, 2009; Pimmer & Rambe, 2018; Yun et al., 2012). The constant notification alert of messages arriving in WhatsApp creates additional stress for instructors to respond after office hours, as boundaries between work and personal time are blurred (Kaysi, 2021).

As a means to balance the tension of not wanting students to contact them yet wanting to contact students for urgent matters after office hours, some instructors resolved to entertaining informal conversations through MIM applications with students. This political strategy was effective for participants who did not mind using WhatsApp for informal conversations with students, such as greetings and wishes received from and sent to students. Tang and Hew (2017) labelled these types of conversation as phatics or salutations. The authors discovered that students appreciated instructors' engagement through MIM applications beyond the classroom setting and felt closer to the instructor.

In this study, some instructors (P3 and P13) perceived that the phatic function of instructor-student communication improves their relationship with students. Instructors wanted to maintain a close relationship with students without exchanging important information, while having an open space of communication (Rosenberg & Asterhan, 2018) so that they are able to connect with students whenever they feel the need to do so. Participants indicated that they felt closer to their students when they use WhatsApp with students after office hours. For example, P3 stated that sometimes she initiates phatic communication when she thinks of students and vice versa. Furthermore, P13 also stated that students feel more engaged and closer to him in relationship when he used WhatsApp with them:

> *"Sometimes I will personally text them to say hi… so when I think of them, I will actually text them and say hi to them… they will still contact me saying hi or greet me Happy Teacher's Day." (P3)*

> *"I do feel they (students) are closer to me and they feel… when we started using WhatsApp, they just come to class but when they start contacting you, they feel more engaged and you can see they are more relaxed… I have a feeling like they feel like they know you more, so they feel closer." (P13)*

This political perspective is also a strategy for instructors to adopt and adapt to the use of MIM applications while they experience the paradox of not

wanting to use MIM applications in principle yet using MIM applications in practice. Rossman et al. (1984) noted that political processes sometimes involve informal communication, negotiation and persuasion. WhatsApp provides an informal platform that is friendlier and less intimidating for students to reach instructors and vice versa (Rosenberg & Asterhan, 2018; So, 2016; Tang & Hew, 2017, 2019). Hence, participants used WhatsApp as a medium to maintain a close relationship with students for the benefit of reaching students beyond office hours if they needed to do so. One of the participants (P2) indicated that WhatsApp allows her to be more engaged yet maintain a distance with students if needed:

> *"I think it (WhatsApp) allows you to somewhat be more in engagement, you know… these days it's easier, I WhatsApp you, you WhatsApp me. WhatsApp helps a lot. I have a WhatsApp group for the student club. I just tell them that you can be friendly but I'm not your friend… it's just something about the boundaries that they (students) are very careful of." (P2)*

Furthermore, P2 also claimed that using WhatsApp to communicate with students was beneficial and she adapted to the use of WhatsApp, *"Sometimes, you just have no choice but you can always find a liking in something that you don't like, just to make it easier on you."* While some participants found ways to adapt and adopt the use of WhatsApp with students after office hours, others claimed that they experienced stress and the pressure of needing to respond to students' messages in WhatsApp. One of the participants stated that she felt 'disgusted' by students' perception that she should be available 24 hours and 7 days a week yet she still gave students her mobile telephone number so that they could WhatsApp her to ask questions about their assignments:

> *"Yes, I do give my contact to students through WhatsApp… to me, the students will take it for granted, yea, like text me during midnight, you understand? They will text me during midnight and ask me how to answer this question because there is a quiz the next day. I feel very disgusted… yea… about this." (P3)*

Another participant, P4, stated that students viewed her availability as an emergency call for help when they needed to clarify assignments after office hours:

> *"So, when you are giving them a number, it's like SOS… like they just keep texting you for… I don't want to say nonsense, but it's simple things that they have to digest and think, and they have to know how to solve their own problem." (P4)*

Participants felt that by setting personal boundaries and rules, they could control students' etiquettes of communicating through WhatsApp. The political perspective is reflected in participants' struggle to gain control over the divergent views on the timing and importance of messages sent through WhatsApp. The following excerpts reflect how participants set personal boundaries and rules when they received messages from students after office hours:

> *"I've had a case where I had one particular student who was really going overboard because he/she was texting me very late… expecting me to respond to a question. What I realised was that you know, it was kind of like pushing the boundaries, you know, it was becoming a bit unreasonable. I had to tell the person to stop texting me! If anything, deal with me during working hours. I will no longer respond." (P2)*

> *"You don't ask me 24 hours before your submission. I will not respond to anyone because you know it's… the panic mode starts [laughter]." (P4)*

> *"…but I will always have this (message) line… this might be the last message because I'm going to bed already… I'll tell them. Although I'm not going to bed, so that they know." (P11)*

> *"After office hours, if I'm out shopping, I'll just look at it and just ignore. I'll just answer at later time, or I don't even answer*

sometimes. Some students, they just ask you stupid questions. That doesn't require for you to really answer it. So, I'll just ignore it." (P15)

Participants adopted strategies in their use of WhatsApp with students by (1) ignoring students' messages by not responding, (2) instructing students to stop texting, and (3) notifying students that they will end the conversation when they realised that the use of WhatsApp with students began to encroach into their personal time. Rosenberg and Asterhan (2018) noted that "flooding" was one of the shortcomings of using WhatsApp as a medium of communication with students. The temporal technological affordances that MIM applications provide can sometimes interfere with instructors' personal lives and encroach into their free time (Rosenberg & Asterhan, 2018; Tang & Hew, 2017). This is particularly reflected in participants' statements below:

"I've had cases where they've texted me at 11pm and they're very apologetic about it, you know… so sometimes students do try to cross over that boundary and I stop them there, you know… So, I did have to cut that person off." (P2)

"I think WhatsApp will be more beneficial to the student, and the student will normally take it for granted… I will immediately text them, "It's midnight, ok? Please do not text me during midnight"." (P3)

Participants experienced drawbacks with the convenience and flexibility of MIM applications. Battard and Mangematin (2013) noted that individuals' roles and boundaries become blurred with the existence of mobile technologies, whereby individuals need to contextualise their interactions and roles more clearly. The blurred boundaries often result in frustration and tension amongst participants. For example, P13 initially indicated that he did not mind students contacting him through WhatsApp after office hours. However, he later admitted that he felt pressured and stressed because he had a feeling that he needed to respond to students' messages while spending time with his family.

"…so… I don't really feel bothered about it (WhatsApp)… yeah… so far I'm still okay with it… [laughter]…I have a feeling that I have to respond because not replying someone's text always makes you feel bad. After office hours and weekends, like last night, after dinner, so normally me and my wife always try… when at home, please put aside your phone. You know… so last night, again it happened that I have to reply to this message and the kids did not look very happy. So, I said sorry but I just need to do this for a few minutes… yeah… I find it difficult to balance, especially when you're at home." (P13)

4.7 Unwilling

Data in this study revealed that 4 participants who were unwilling to use MIM applications to communicate with students because they wanted to maintain control over their professional versus personal time, as well as their professional roles as instructors during and after office hours. The most salient factor that affected participants' unwillingness to adopt MIM applications was the *political* factor, in which the theme of "professional role" emerged from the data. Participants believed that as instructors, they should have a clear line drawn between personal and professional roles with students (see Figure 11). Participants noted that temporal and space mobility have enabled students to contact instructors, not just beyond the classroom, but beyond office hours. Thus, the participants who were unwilling to adopt MIM applications believed that the application will disrupt the balance between personal and professional time and blur the boundaries.

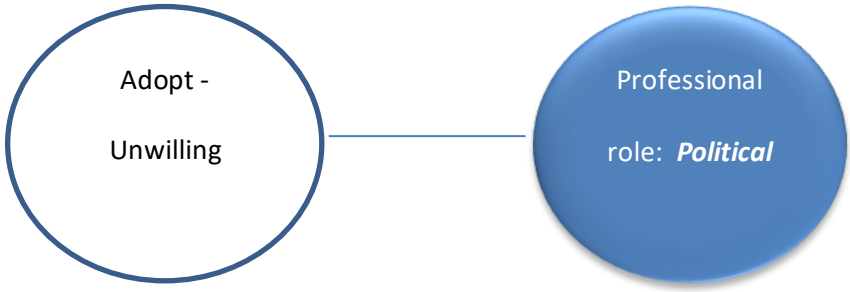


Figure 11: Unwilling Participants

Participants felt that the use of MIM applications should be for personal rather than professional use. Since they play the role of a higher authority as an instructor for the course, they imposed rules over students who wanted to use MIM applications with them and made students comply with the rules that were set prior to the beginning of the course. One of the participants, P1, emphasised the need to make the rules clear before beginning the course: *"No! I don't give them my hand phone number. So, no WhatsApp group! No WhatsApp group!"* Another participant, P20, insisted on the importance of setting clear communication protocols at the beginning of the class so that students' expectations will be aligned to hers: *"I think students are not… well educated in regards to boundary. I think uh… it is important to establish initial communication cadence and protocol with the students… students are students."*

Participants who were unwilling to use MIM applications were adamant to maintain work-life balance. For example, P20 claimed that her perception of MIM applications is only for personal use since it is her personal telephone and number:

> *"I don't know it's just the way I perceive phone as being my personal tool to communicate with select few people… and if I were to blur that boundary, it's just that… because my brain is conditioned to function… ok. This is my phone, it's meant for a group of people, not for any Tom, Dick and Harry." (P20)*

Furthermore, participants did not adapt to the use of MIM applications but enforced the culture of not adopting MIM use by (1) setting boundaries in time and (2) setting boundaries in their professional relationships with students.

4.7.1 Professional role: Political

Tarafdar et al. (2007) noted that the lack of boundaries experienced by individuals in the workplace and at home due to the rapid changes in adopting technologies has caused role stress and overload. Thus, participants who are

unwilling to adopt MIM feel that it is necessary to draw boundaries in their professional roles as instructors beyond the classroom setting and after office hours. Participants in this study also felt that it is necessary to maintain the professional role of an instructor throughout their relationship with students. Thus, the use of MIM applications is not suitable in the context of instructor-student relationships.

The following excerpts describe the sentiments of several participants in trying to maintain their professional roles as instructors:

> *"Let's say if they are not in the class, after the class when I check, then oh I got it… unless the student needs me to be there. But if let's say if you have an accident, you definitely call the police first. You won't call me." (P1)*

> *"Anything urgent, they should call 999, I told them. Yeah. Anything urgent, you call 999. I cannot help you. Yeah. How urgent it can be when it comes to teaching? You get what I mean? I'm not a doctor. I'm not a doctor. I don't work during emergency. You see, if there is an emergency, you call 999. That also, I told them." (P8)*

> *"… I don't think we need to… boundary, right?... there's more in life than just work… I do um… provide different avenues and platforms for my students to contact and reach out to me. For example, um… if they're the most comfortable with Teams, you know, they can reach out to me. However, I do have my office time despite… you know, like, online, you know, classes during the pandemic, they just have to respect that. Again, boundary." (P20)*

These participants perceived that their roles as instructors should be clearly distinguished within and beyond the classroom setting, particularly after office hours. The negotiation of power and authority in the context of using MIM applications after office hours is apparent when participants commented on their reluctance to accommodate students who have sent them messages through MIM applications after office hours:

"They can plan it ahead of time and they have discussion with me, and it's not that, "Oh, last minute, I'm working on it. Tonight is the deadline and I have to submit online, and 9 o'clock at night, I don't know how to do it. Then I start WhatsApp my lecturers and all that." I don't entertain this kind of a request… No. I have not had students complaining about me. I don't allow that." (P8)

"One of the key… student engagement isn't about having no boundaries for example. That's what a lot of the practices are I see. People have no sense of "they are staff and they are students" and there is relationship there, but there is a power dynamic and it needs managing." (P19)

In this way, MIM applications de-compress the hierarchical structure and power between instructors and students, which results in students being ignorant of etiquettes in using MIM applications to contact instructors beyond office hours. Students experience a shift in relational rapport with their instructors through the use of MIM applications as the technology enhances social presence and negates power in the hierarchy of instructor-student relationship (Rambe & Mkono, 2019; Tang & Hew, 2020). Hence, participants who refuse to adopt MIM applications with students in this study are determined to maintain the hierarchy and professional role as an instructor, even beyond the classroom setting.

Besides maintaining power in the instructor-student relationship, participants felt that they should not be the first point of contact if students face an emergency situation after office hours. Participants perceived that their roles are entwined with their profession as instructors rather than moving into developing personal relationships with students. Participants also viewed students' spontaneity of soliciting responses through MIM apps as a lack of awareness in understanding the appropriate use of MIM applications beyond the classroom setting. They felt that students should be taught on the appropriateness of communicating with instructors through MIM applications, particularly the use of MIM applications after office hours. Professional

boundaries should be set in terms of maintaining the instructor-student relationship, as instructors are students' superiors and higher in authority as well as status.

Even though participants are aware of students' frustration in receiving delayed responses from instructors, some participants claim that MIM is a tool for spontaneous response that cultivates a lack of awareness amongst students, whereby students seek immediate responses from instructors and are oblivious of the appropriate time to send messages beyond office hours:

> *"So, WhatsApp is more spontaneous. Whenever they feel like contacting you, they contact you. They don't care what time is it, where you are, and where they are, they just... Spontaneous… and they would... When you start to use WhatsApp, they will expect... The student also has that kind of expectation you will immediately respond to them, which I do not like." (P8)*

Participants highlighted that it was important for them to have a balance between work and personal time. P1 stated that*, "There should be a balance between work and personal life, or else with 200-300 students, I will not be able to have after office hours."* On the other hand, P8 also believes that instructors should reciprocate similar expectations of not contacting students beyond office hours:

> *"I don't contact them after office hours. I do not contact them during weekends. It's their private time. They are entitled to their private life and I shouldn't disturb them. If they do the same to me, I would tell them no." (P8)*

Participants in this study exerted their authority by disallowing students to use MIM applications as a form of communication so that they can manage the personal and professional roles as well as time after office hours. By curbing students' behaviour in contacting them through MIM applications, research shows that participants experience less communication overload and burnout on the job (Cho et al., 2019). Furthermore, participants are also able to

clearly distinguish their roles as instructors instead of students' friends. As shown in the following excerpts, participants desire to draw a clear line in maintaining their professional roles as instructors, as well as personal versus professional time:

> *"I don't give them my mobile telephone number. So, no WhatsApp group." (P1)*

> *"I don't want to be their friend. I'm their lecturer. I don't try to be their friend. So, to me, it's fine. They just have to... I don't have to be super friendly with them and to be very warm with them. My job is to teach. Yeah, so as long as I do my job, I think that they should respect my choice. Yeah." (P8)*

> *"Never… I refuse to give it (mobile telephone number) to them… again, it's about boundaries… if you want your family time protected, which… if you as a member of staff want to feel okay about not working outside of your paid work hours, you should be totally comfortable with that and feel no pressure from any quarter." (P19)*

As shown in the excerpts above, participants strongly feel that time beyond office hours is for personal use rather than entertaining students' messages through MIM applications. Research (Cho et al., 2019) has shown that HEIs use mobile technologies to facilitate communication, particularly MIM applications. Thus, the professional roles of instructors have changed, whereby instructors are expected to work beyond office hours and respond to students' questions should they receive messages from students via MIM applications. This paradigm shift in instructor-student communication can potentially create role-oriented stress for instructors (Cho et al., 2019).

4.8 Adapting to Not Using MIM applications (Unwilling)

Participants who were unwilling to adopt MIM applications were concerned with two factors, which were cultural and political (see Figure 12). Two themes emerged from the data, which were related to the political and cultural factors: (1) personal versus professional boundaries; and (2) official communication platform. In this instance, participants wanted to change students' culture from using to not using MIM applications with them. Participants believed that using MIM applications to communicate with students in HE causes students to expect and gravitate towards receiving instantaneous responses from instructors. This results in interference in instructors' personal and professional time, particularly after office hours. Hence, participants felt that it was vital to re-shape students' behaviour and expectations to adapt to not using MIM applications in order to maintain a professional relationship with students.

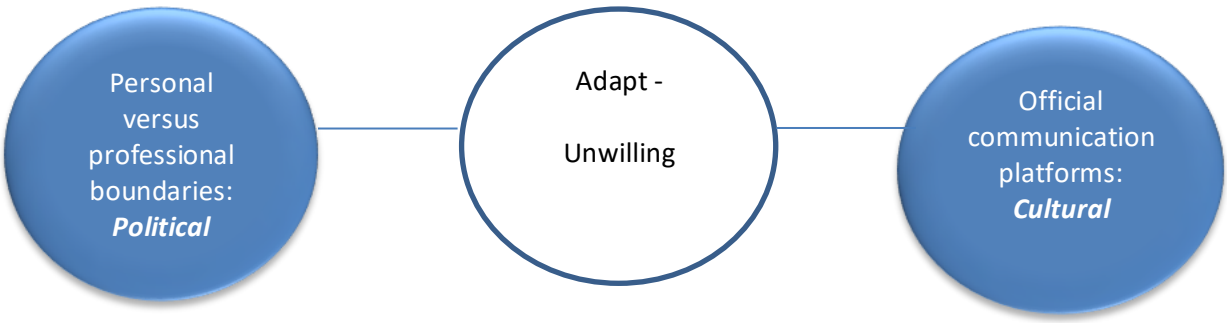


Figure 12: Adapting – Unwilling

In participants' opinions, adapting towards the culture of using MIM applications after office hours is unseemly in their profession. From a political perspective, instructors feel that they have the authority and professional responsibility to change students' behaviour by ensuring that students adapt to not using MIM applications with instructors. The following excerpts reflect participants' sentiments towards changing students' behaviour of not using MIM applications:

"I don't give handphone (numbers)… because in year 1, they have been trained that lecturers don't give handphone (numbers)? They know that to contact lecturers it's either through uh… email, office, office phone." (P1)

"When you start to use WhatsApp, they will expect... The student also has that kind of expectation that you will immediately respond to them, which I do not like. I do feel that even sometimes when we see a message, maybe we are angry or we feel angry, we feel annoyed, we feel frustrated, you don't want to let that emotion to control you and you say something which is hurtful or which is not appropriate in your profession." (P8)

"…staff would put their mobile numbers and I was like why are you putting mobile numbers on the subject outline for students? They'll ring you! They'll contact you!... and they're like, "But we need it for WhatsApp! To create our WhatsApp groups for the modules!" and I'm like "You cannot do that! We're communicating through email all the time." And they're just like "This can't be" looking at me like I was crazy." (P19)

The political factor comes into play due to divergent interests and expectations on the use of MIM applications beyond office hours. Participants realise that they will have no personal time if they adopt and adapt to the use of MIM applications after office hours. Thus, they want to distinguish between personal versus work time, especially after office hours. P8 outlined that students should respect her personal time and she reciprocates the same: *"I don't contact them after office hours... during weekends. Its' their private time. They are entitled to their private life, and I shouldn't disturb them. If they do the same to me, I would tell them no."*

Corbett and Rossman (1989) studied the cultural factor of change in schools and found that behavioural change can be administered when frequent communication emphasises on "what is and ought to be" (p.168). In that regard,

behavioural change may need to occur before cultural change comes about in such contexts. To participants, this behavioural change is necessary before the cultural change of not using MIM applications can be cultivated between instructors and students, as participants believed that students must be taught how to behave appropriately in the professional relationship with instructors.

Participants created strategies to enforce the culture of not adopting MIM with students in their courses by using the political factor - their authority, to set expectations as well as maintain professional relationships with students. Participants engaged in political strategies by (1) enforcing official communication platforms, and (2) setting boundaries in their time to communicate with students after office hours. The cultural and political perspectives of not adapting to the use of MIM applications with students appear to "protect" instructors from being overwhelmed with the need to respond to students' messages after office hours.

Firstly, participants who were unwilling to use MIM applications with students in this study adapted to not using MIM applications by setting expectations, norms, and rules to change students' communication culture for their classes. These participants were not interested to socialise with students via MIM applications, as compared to students' desire to connect with them through the social networking platform (i.e., WhatsApp). Thus, the divergent interests motivated participants to set clear expectations on the chosen communication platform for courses that they were teaching (Corbett & Rossman, 1989; Rossman et al., 1988). Participants changed students' culture of communication by setting up official communication platforms and demanded students to use the official platforms for any communication about the courses. Secondly, the political process of adapting to not using MIM applications involves establishing professional roles and time, whereby participants (1) set boundaries in their timing of communicating with students, and (2) set boundaries in maintaining professional roles in their relationship with students (Rossman et al., 1984).

Political factors involve role negotiation and managing divergent interests of all parties involved in the process of change (Corbett & Rossman, 1986, 1989). In this study, participants executed the political perspective by enacting their professional roles as instructors in maintaining professional communication platforms and managing their time in communicating with students within office hours so that students will conform to the culture that they have set for the courses. Participants believed that as the higher authority in the classroom, they have the right to set expectations and cultivate the culture of using appropriate or official platforms for communication with students. Thus, participants did not want to conform or adapt to students' culture of using MIM applications in HEIs, as they perceived that students need to be taught etiquettes of using MIM applications in the context of HE.

4.8.1 Personal versus professional boundaries: Political

Participants' perspectives towards the use of MIM applications are affected by the purpose of using WhatsApp in everyday life, in which they perceive WhatsApp as a social networking tool that is used for personal relationships outside of their profession, as well as an informal mode of communication. Hence, participants wanted to preserve their interests of adopting MIM applications for personal rather than professional use, which diverges from students' purpose of using MIM applications in HE. In this case, the political factor deters participants from using MIM applications to communicate with students in order to distinguish their personal versus professional relationships beyond the classroom setting (Corbett & Rossman, 1989). One of the participants clearly outlined that, *"personal is personal, work is work"* (P1). P1 also highlighted that the mobile telephone number used for WhatsApp is a personal number and should only be used during personal time: *"I think WhatsApp is very personal. I mean if to give students my phone number is a big NO, NO!"* Pimmer and Rambe (2018) noted that individuals who engage in MIM use create a socially constructed reality whereby both parties may experience conflicting negotiations in the terms of usage.

One of the participants, P8, believed that it is the instructor's responsibility to cultivate a culture of distinguishing personal versus professional time amongst students. Thus, instructors should change students' behaviour and make them adapt to not using MIM applications to communicate with instructors concerning academic matters:

> *"…they (students) have to be taught to respect people's private time. People always cannot keep... Cannot draw a line between their job and their personal life, even if it's a WhatsApp group for work, they still talk a lot about personal things, which is also something... Yeah... They cannot draw the line. They mix everything together." (P8)*

Besides viewing MIM as a personal communication tool, participants also seek to maintain boundaries within their professional roles with students. P8 commented that, "*I don't want to be their friend. I am their lecturer."* Another participant, P19, stated that instructors should be allowed to choose whether they want to use MIM applications for work or maintain the use within their private lives, "*…it's his thing* (MIM), *for his private life. He's not going to use it for work…"* Garcia Moreno (2021) stated that today's virtual communication is very much similar to the physical communication in everyday life due to the geographic and spatial mobilities that MIM applications afford. Another participant, P20, mentioned that HEIs have official platforms and boundaries should be drawn between her personal life and professional relationships,

> *"… I think it's just more of uh… how my perception towards WhatsApp… where it revolves around my personal life, personal relationships. That's where I draw boundaries. That's why when it comes to work, Teams, email, but when it comes to besides work, ok, my number." (P20)*

The lines between using MIM applications for personal communication versus professional communication have been blurred by the functions that MIM applications afford in contacting others. So, there is a need to distinguish

between the use of MIM applications for personal or professional life so that instructors are not over-burdened by the constant connectivity and geographic mobility with the use of MIM applications. Instructors are increasingly facing the stress of needing to be online constantly with the existence of MIM applications. Therefore, technology fatigue causes instructors to feel burnout easily, hence, rejecting the adoption of MIM applications with students (Halupa & Bollinger, 2020).

Participants were unwilling to use MIM with students as they disagreed with forming personal relationships with students beyond their professional roles as instructors. Thus, participants wanted to set the appropriate expectations for students to adapt to their desire to maintain MIM applications as an informal tool of communication for personal relationships. P1 indicated that she neither mentions in class nor gives students her mobile telephone number to avoid setting the culture or allowing students the opportunity to contact her through this mobile platform. Furthermore, students will not ask for her mobile telephone number to engage in MIM as she does not provide her mobile telephone number: "*No. I don't even mention and I don't give handphone numbers…"* On the other hand, P8 also mentioned that she does not want to be too close to her students: *"I don't have to be super friendly with them* (students) *and be very warm towards them. My job is to teach."* Distinguishing the relationship that instructors have with students seemed to be important to P19. He mentioned that many instructors fail to set clear relationship boundaries with students, in which they mix up the personal and professional relationships. The lack of differentiation between personal versus professional use of MIM applications can be detrimental to the instructor-student dynamics in the course:

> *"That argument is uh… staff misunderstand a lot of the context you know… student engagement isn't about having no boundaries for example. That's what a lot of the practices I see. People have no sense of "they are staff and they are students" and there is relationship there, but there is a power dynamic and it needs*

managing. Staff seem to be oblivious to that. A lot of staff… and that causes problems." (P19)

Bere and Rambe (2016) noted that individuals create separate spaces or channels to manage the boundaries between professional and personal relationships. In this study, participants forced students to comply to their rules by not giving their personal mobile telephone numbers, so that the boundary is clearly set. Negotiating formal and informal communication through MIM applications is vital for instructors in today's HE environment due to the mobility that technology provides. Failure to set boundaries may lead to work-overload, as the profession of instructors in HE faces the pressure of working long hours due to the nature of the job (Currie & Eveline, 2011).

The need to be detached from students beyond the classroom setting is reflected in participants' responses, whereby they perceive conversations with students in MIM applications to intrude on their personal time and space. Researchers (Bere & Rambe, 2016) found that most conversations in MIM tend to take place between 6pm and 11pm. Participants who were unwilling to use MIM in this study wanted to distance themselves from being too personal with their students, as they were not convinced that students know how to handle the mobile application to communicate with instructors appropriately. For example, P8 mentioned that not all students know how to use MIM applications "wisely" and should be taught how to have better time management, *"…I don't reply to my email or reply to my message or reply to the WhatsApp spontaneously… They can plan it ahead of time and have a discussion with me… That is part of your training. You plan ahead of time, you manage your time, you manage your assignment."* Another participant, P19, mentioned that WhatsApp can be a social media platform that cultivates a "knee-jerk response" from students, which becomes an informal platform of communication,

"…If you think about the WhatsApp headspace, it's very informal, people say sort of a bit like social media, Facebook comments type environment where you don't think much before you speak, yeah? It's quick, you see you quickly… It's a knee-jerk response." (P19)

Even though participants in this study knew that their lack of interest to adopt MIM applications creates a concern amongst students who want to reach them beyond the classroom setting, participants felt that they should set a professional and personal boundary in their time and role as instructors to avoid stress and burnout. Participants believed that their jobs consist of no emergency situations that would arise after office hours or beyond the classroom setting. Often times, it has been found that the expectation of receiving immediate responses from instructors creates frustration amongst students (Pimmer & Rambe, 2018). Students often perceive instructors to be available 24 hours a day, 7 days a week when it comes to the flexibility and use of MIM applications beyond the classroom setting (Bouhnik & Deshen, 2014; Pimmer & Rambe, 2018).

In order to restrict the adoption of MIM applications with students, participants set boundaries on professional versus personal time beyond the classroom when they communicate with their students. P1 stated that there is a need to draw a line between personal and work life balance after office hours with two hundred to three hundred students in her classes or she will not be able to have after office hours. In addition, P8 has also highlighted that it is imperative to respect everyone's personal time beyond office hours, *"It's not about whether you use WhatsApp or you don't use WhatsApp… they (students) have to be taught to respect people's private time."*

When participants were probed further about their willingness on the institution's decision to implement a policy of using WhatsApp to communicate with students beyond classroom settings, P1 indicated that she "will not agree if the institution implement a policy to use WhatsApp". She claimed that it would be an invasion to her privacy. P8 also highlighted that she believes not everyone can draw a line between work and personal time. Hence, she will choose to ignore messages that come after office hours if her institution implements a policy to use WhatsApp as a tool of communication with students beyond the classroom setting:

"Then in that case, most probably, I will have to... I have to try not to look at it and try to avoid looking at the message after certain hours and... yeah... My boundary is between a certain time. Five days a week and not 24 hours, definitely." (P8)

Some participants stated that students are oblivious of the time and manners in sending instant messages to instructors via MIM applications, which is why instructors feel reluctant to engage in the use of MIM applications with students. For example, P8 indicated this obliviousness of the time when students send messages to instructors beyond office hours:

"They don't care what time is it, where you are, and where they are, they just... spontaneous… and they would... when you start to use WhatsApp, they will expect... the student also has that kind of expectation you will immediately respond to them, which I do not like." (P8)

Participants wished that students would realise the temporal aspect of appropriate MIM usage besides acknowledging the spatial mobility that MIM applications offer in terms of convenience. Researchers (Cho et al., 2019) have found that overdependence on the use of MIM can negatively impact employee's lives, which may result in burnout and emotional exhaustion. Furthermore, technostress is a common phenomenon that occurs among instructors in HE (Halupa & Bolliger, 2020; Panisoara et al., 2020). Technostress is the inability to cope with adopting or adapting to the use of technologies (Brod, 1984). Participants in this study were fearful that the use of MIM applications will blur the boundaries between their personal and professional lives. Thus, they rejected the idea of adapting to the use of MIM applications with students but would rather make students adapt to not using MIM applications with them. Setting boundaries in professional versus personal time enables instructors to have control over students who gratify towards immediate responses and presume that instructors are available for them 24 hours a day, seven days a week (Bouhnik & Deshen, 2014).

The political factor, which emphasises on power and authority to bring about change, is seen in participants' persistence to reject the use of MIM applications with students. For example, P1 refuses to even mention about the use of mobile telephone numbers at the beginning of the term for her courses: *"No, I didn't even mention that I don't give handphone (number)"*, and P8 is persistent with her decision of not adopting MIM applications and directs students to send her emails instead of a message via MIM applications: *"Although I don't use WhatsApp and I don't give away my phone number, but I do have email… It's not that they don't have a way to contact me".*

Participants set boundaries to ensure that their profession does not encroach into their personal time beyond office hours. By enforcing the rule of not adopting and adapting to the use of MIM applications with students, participants believe that students will have to change and follow the rules set since instructors are the authority in the classroom. The unchallengeable mandate appears to help participants feel that they can alter students' behaviour and implement change within the culture of using MIM applications to communicate after office hours (Corbett & Rossman, 1989).

4.8.2 Official communication platforms: Cultural

Today's HEIs have adopted different types of communication platforms (e.g. MS Teams, WhatsApp, Telegram, etc.) to engage with students as well as academic staff. The culture of using MIM applications has seeped into HEIs and produced different effects on students' learning. Some researchers (Tang & Hew, 2022) have discovered that students using MIM applications positively affected their motivation to learn. However, other researchers (le Roux & Parry, 2022) have noted that the use of MIM applications can exacerbate instructors' stress levels with the out-of-classroom communication that takes place in these MIM applications. The view of these online platforms can be subjective, whereby an individual perceives them as informal communication platforms for socialising or formal communication platforms for work. With such views on the use of WhatsApp, participants in this study wanted to retain the existing culture of using formal platforms that were provided by the HEI for formal engagements

with individuals who are part of the HEI ecosystem. Setting boundaries in time also entails setting boundaries in the communication platforms used by instructors and students to communicate academic matters.

Participants felt that WhatsApp was not an official platform for communication, as it cultivates a culture of soliciting immediate responses from instructors. For example, P8 mentioned that she despises the use of MIM due to the spontaneous culture that MIM applications cultivate amongst users for formal communication, particularly when her superiors demand for work to be done: *"…the boss thinks of something… they take it for granted. Actually, nothing is urgent. The things can be done at another time and... Yeah, sometimes a decision is just spontaneous, not really important."* For participants who were unwilling to use MIM applications, they perceive the use of MIM as an informal communication tool to maintain personal relationships. Besides, participants could not understand students' need to use personal communication platforms when the HEI has given both instructors and students access to official platforms (e.g. MS Teams and BlackBoard) for communicating about academic matters. For example, P1 and P8 strongly felt that students should use official communication platforms to contact instructors and refused to adapt to the change of using WhatsApp to communicate with students:

> *"…no WhatsApp group… because everything is on eLearn (the institution's learning management system … eLearn is our official platform." (P1)*

> *"Although I don't use WhatsApp and I don't give away my phone number, but I do have an official email which they can email me." (P8)*

On the other hand, P19 recognises the challenge in engaging students to use the official communication platforms but indicated that it is not impossible. He stated that students should know the rules of using communication platforms that are officially set up by the HEI. Furthermore, instructors should enforce the practice of using official HEI platforms to

communicate with students, regardless of within or beyond the classroom setting:

> *"There's the university ecosystem which includes students' email accounts, OneDrive, SharePoint, Teams… it's provided by the university, supported by the university… If staff or students who are using third party providers and there's any kind of dysfunction, break down or deny of access to their account, all that kind of stuff, they have no recourse, so we can't to afford to do it. Staff shouldn't be doing it; students shouldn't be doing it." (P19)*

Instructors' responsibilities were stated to ensure that students transition into the workplace by knowing how to distinguish between official and personal platforms of communication:

> *"It's hard work to get them to use email. It's not impossible and in a way, both staff and students have to recognise if they (students) want to be employable, any company they work for will have a way of working and a way of communicating and many of those company will stipulate how it's done and you have to follow it otherwise you get sacked. I mean, we're not... universities are a transitionary space, we're not a school, we're not a company, but we're teaching… one of the points of the university is to prepare students for employability, make them employable and if we as academics… if we're useless at it and all over the place, the students wouldn't learn anything." (P19)*

One of the ways to set boundaries was to direct students to use official communication platforms that the institution has set up for students to contact instructors, such as using the institution's email address or the learning management system (i.e. BlackBoard) that is set by the institution. In order for students to change their behaviour of not using MIM applications with instructors after office hours, instructors should execute their authority in altering students' behaviour of texting instructors using unofficial

communication platforms. The reluctance to adapt to students' culture of using WhatsApp for academic matters, as well as the desire to maintain the status quo of using official platforms to communicate with students, resulted in these 4 participants' unwillingness to adopt and adapt to using WhatsApp with students. For example, P8 highlighted that *"Even if I have WhatsApp, I will not necessarily respond… my job is to teach. So, as long as I do my job, I think they should respect my choice."* P8 felt that it was not necessary for her to reciprocate by using the same communication platform that students impose upon her and HEIs should cultivate a culture of using official platforms amongst students and staff. She felt that she should educate students to use official communication platforms that the HEI has set for instructors and students to communicate about academic matters.

Another participant, P1, noted that she will be burnt out if she was expected to respond to students' messages after office hours. Thus, she enforces the use of official communication platforms with students so that she can maintain a balance between her professional versus personal time: *"They (students) can always email… There should be a balance between work and personal life, or else… I will not be able to have after office hours."* Cho et al. (2019) noted that overuse of MIM applications can cause burnout and role-oriented stress. The pervasive connectivity of MIM causes instructors to feel that they will lose their sense of control over time and space (Tarafdar et al., 2007). Hence, measures need to be taken to curb the invasive nature of MIM beyond classroom settings and by setting the policy to use an official platform for communication, instructors feel that they can somehow differentiate their roles in personal and professional settings. Without imposing clear official platforms for communication, participants feel that they will also lose sense of their personal versus professional time if they adapt to students' culture of using WhatsApp after office hours. Hence, participants in the category of being unwilling to adopt MIM applications with students refused to adapt to the changing culture of using MIM applications for official matters in their profession but would rather maintain the existing culture of using official platforms to communicate with students, peers and superiors in the HEI. In a sense,

participants in this category were anticipating for others to change and adapt to their culture of not using MIM applications for work purposes.

4.9 Theoretical Explanation of Findings

This section will summarise the themes that emerged and the influence of each factor (i.e., political, cultural, learning activity and technical) on participants' willingness to adopt and adapt to using or not using MIM applications with students. This section will also highlight the connection between categories of participants, themes, factors and key perspectives of participants to form a theoretical explanation for the findings of this study (see Table 7). The four factors that were connected to the themes that emerged from the data will be discussed in the following sections.

4.9.1 Proposed theoretical framework

A proposed theoretical framework that draws together the influences of each factor on participants' willingness, as well as unwillingness to use MIM applications with students has been developed from this study (see Table 8, Table 9, Figures 13 and 14). Additionally, Tables 8 and 9 also highlights key perspectives from each participant of this study. Data from this study revealed 3 categories of participants, which were (1) willing, (2) unwilling in principle, used in practice, and (3) unwilling.

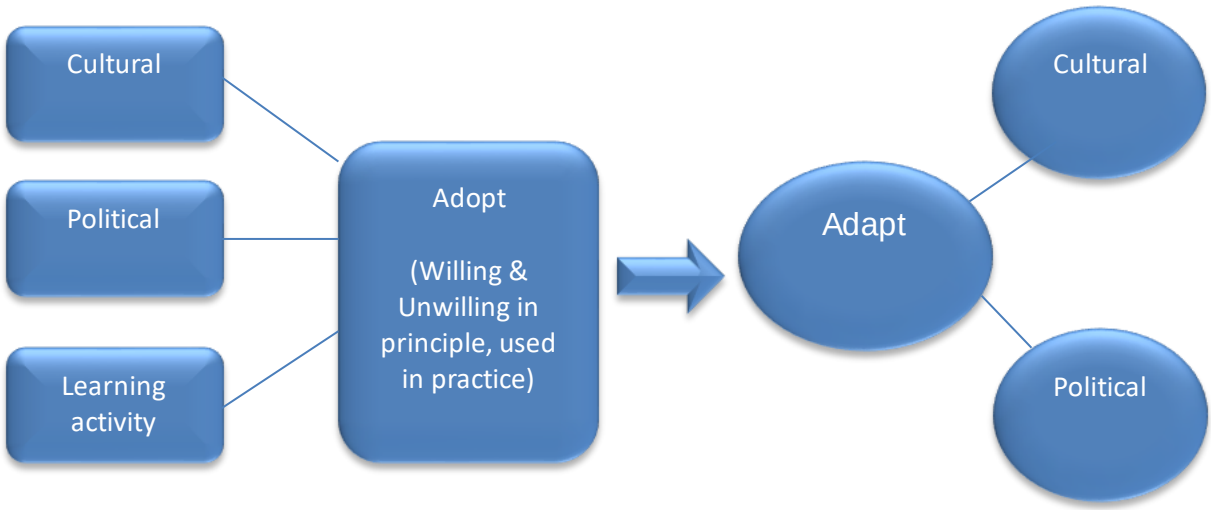


Figure 13: Proposed Theoretical Framework - Willing and Unwilling in Principle, Used in Practice

As I approached the data through CGT analysis, I noticed a distinct difference between a group of participants who were enthusiastic over the use of MIM applications with students (Willing) versus another group of participants who were completely against the adoption of using MIM applications with students (Unwilling). In the midst of conducting focused coding, the data began to reveal another category of participants who were indecisive and experienced the paradox of wanting to adopt MIM applications with students yet viewed the technology as an informal platform that may intrude their personal lives and space (Unwilling in principle, used in practice).

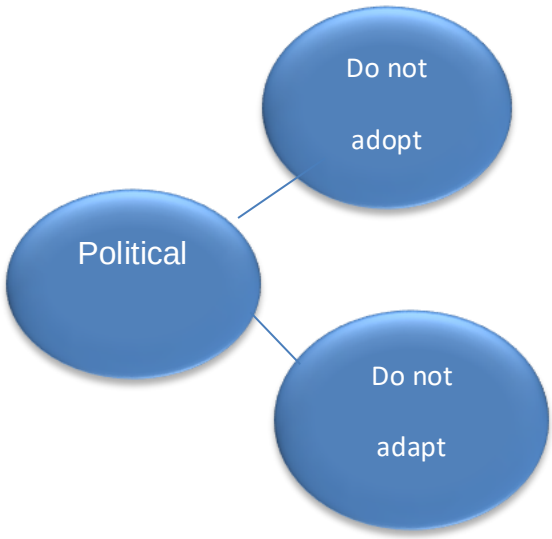


Figure 14: Proposed Theoretical Framework – Unwilling

Table 8: Categories, Themes, and Key Perspectives

Categories of participants	Themes	Factors in adoption and adaptation	Key perspectives from participants
Willing	**Adoption** • Students' and instructors' WhatsApp use • Instructor-student relationship • Expectations from peers and superiors • Instructors' convenience and intention • Records of evidence • Immediacy in feedback **Adaptation** • Students' communication culture • Setting boundaries	**Adoption** • Cultural • Political • Learning activity **Adaptation** • Cultural • Political	• "If I'm out shopping, I'll just look at it and just ignore." **(P5)** • "…in a sense, that messages can be sort of like recorded as an evidence…" **(P6)** • "…I am accessible to them (students) any time of the day…" **(P7)** • "…I've never feel bothered by students who WhatsApp me at night because I will reply." **(P9)** • "It's (WhatsApp) very good because, I think, it's really for us to communicate. **(P10)** • "I think it's a must now, because even they (management) come to ask…" **(P12)** • "I enjoy using WhatsApp… I really appreciate if they (students) were to WhatsApp me…" **(P14)** • "I check my WhatsApp like every 15 minutes…" **(P16)** • "…having that WhatsApp just means that I don't have to inconvenience my students to come and then find a note on a door that there's no class and whatever it is." **(P17)** • "I think it's (WhatsApp) easy…everyone uses WhatsApp nowadays, right?" **(P18)**

Categories of participants	Themes	Factors in adoption and adaptation	Key perspectives from participants
Unwilling in principle, **used in practice**	**Adoption** • Change in students' learning culture • Role of a counsellor • Power to control students • Communication with colleagues and superiors • Immediacy in feedback **Adaptation** • Students' communication culture • Role of counsellor • Setting boundaries	**Adoption** • Cultural • Political • Learning activity **Adaptation** • Cultural • Political	• "…with the student generation getting younger and more exposed to technology, you have NO CHOICE but to convert…" **(P2)** • "Yes, I do give my contact to students through WhatsApp and the student, to me, they will take it for granted…I feel disgusted…yea…" **(P3)** • "…if they will have a personal issue. I've done counselling through WhatsApp." **(P4)** • I only gave (mobile telephone number) to the class rep. But some class reps are not very discreet and go and share all around…WhatsApp impacting my personal life…it's really annoying." **(P11)** • "If they (the institution) have a policy to use WhatsApp as an official channel, I don't really prefer this method… but right now, with this communication between the lecturer and student, institutions feel that we should make ourselves more available to students [laughter]…" **(P13)** • "…so, I use WhatsApp…because sometimes I need urgent results, urgent reports…" **(P15)** •

Categories of participants	Themes	Factors in adoption and adaptation	Key perspectives from participants
Unwilling	**Adoption** • Professional role **Adaptation** • Personal versus professional boundaries • Official communication platforms	**Adoption** • Political **Adaptation** • Cultural • Political	• "I think WhatsApp is very personal. I mean if to give students my phone number is a big NO, NO!" **(P1)** • "How urgent it can be when it comes to teaching?... I'm not a doctor… I don't work during emergency…" **(P8)** • "There's the university ecosystem… it's provided by the university… If staff or students who are using third party providers… Staff shouldn't be doing it; students shouldn't be doing it." **(P19)** • " For the purpose of teaching and learning? No. Never… I'm very careful with who I share my number…" **(P20)**

Table 9: Summary of Participants' Profiles

Participants	Gender	Academic position	Type of Institution	Years of teaching experience	Area of expertise	Category
P1	F	Senior Teaching Fellow	Private	15	Business	Unwilling
P2	F	Lecturer	Private	14	Social sciences	Unwilling in principle, used in practice
P3	F	Senior Lecturer	Private	8	Mathematics	Unwilling in principle, used in practice
P4	F	Lecturer	Private	7	Arts	Unwilling in principle, used in practice
P5	M	Lecturer	Private	10	Social sciences	Willing
P6	M	Lecturer	Private	21	Arts	Willing
P7	F	Associate Professor	Public	15	Sciences	Willing
P8	F	Professor	Public	19	Sciences	Unwilling
P9	F	Associate Professor	Public	8	Sciences	Willing
P10	F	Senior Lecturer	Public	4	Sciences	Willing
P11	F	Associate Professor	Public	7	Sciences	Unwilling in principle, used in practice

Participants	Gender	Academic position	Type of Institution	Years of teaching experience	Area of expertise	Category
P12	M	Senior Lecturer	Public	2	Sciences	Willing
P13	M	Senior Lecturer	Public	3	Sciences	Unwilling in principle, used in practice
P14	F	Lecturer	Private	20	Social sciences	Willing
P15	F	Senior Lecturer	Private	4	Sciences	Unwilling in principle, used in practice
P16	M	Lecturer	Private	10	Social sciences	Willing
P17	M	Professor	Private	15	Sciences	Willing
P18	F	Senior Lecturer	Public	2	Sciences	Willing
P19	M	Professor	Private	20	Arts	Unwilling
P20	F	Associate Professor	Private	15	Humanities	Unwilling

Upon further analysis of comparing codes, themes, and participants' responses line-by-line, the themes began to unveil a pattern of factors that influenced participants' willingness to adopt and adapt to using or not using MIM applications with students. These factors conveyed preferred practices that were embedded in participants' personal and professional perspectives of their working practices. Firstly, the ***political*** factor appeared to resonate with different sentiments across all categories of participants (i.e., willing, unwilling in principle but use in practice, and unwilling). The political factor influenced participants to adopt and adapt to the use of MIM applications with students, as well as allowed participants to exert their power and not adopt or adapt to the use of MIM applications with students. Secondly, the ***cultural*** and ***learning activity*** factors influenced participants' willingness to adopt and adapt to using MIM applications with students, particularly due to students' current learning trends (e.g. using WhatsApp to collaborate with peers in assignments, using mobile telephones to capture images of their work before sending the images to instructors through WhatsApp, and using WhatsApp to clarify course content with instructors via text or voice recorded messages). Finally, the ***technical*** factor did not affect participants either in terms of deterring or encouraging them to adopt or adapt to using as well as not using MIM applications with students.

Studies in the past (Corbett & Rossman, 1986; Corbett & Rossman, 1989; Rossman et al., 1984; Rossman et al., 1988) have noted that the political, cultural, and technical factors have played an important role in influencing the implementation of change and adoption of new technologies amongst instructors in education. Another factor, learning activity, was also identified by Passey (2010) as an important element to consider while encouraging instructors to adopt mobile technologies in teaching and learning. Using MIM applications to engage in various learning activities can enhance students' understanding of the course content (le Roux et al., 2021). Even though some past researchers (Bakirtas & Akkas, 2020; Stickney et al., 2019) have highlighted that technical challenges have deterred instructors from being willing to adopt mobile technologies for teaching, this study suggests that the technical factor may not be an influential factor in instructors' willingness to use

mobile technologies with students, but rather the *political*, *cultural* and *learning activity* factors influenced their willingness to adopt or not adopt the use of mobile technologies with students. That is, instructors' attitudes and perspectives towards the consequence of adopting the use of mobile technologies with students (i.e., the political factor), as well as the adaptation process towards the change upon adopting the use of mobile technologies with students (i.e. the cultural factor) influence their willingness to adopt and adapt to using or not using MIM applications in their profession. Furthermore, the functions of MIM in facilitating as well as enhancing learning or engagement on the course content through pictures and messages (i.e., the learning activity factor) motivated instructors in this study to willingly adopt and adapt to using MIM applications with students.

Recent studies (Henderson & Corry, 2021) have also noted that instructors' willingness to adopt technological changes in education is due to their perspectives on *cultural* and *political* implications of adopting the technology. Furthermore, instructors' adaptation towards the change of using mobile technologies for teaching involves emotional (e.g. attitude towards the technology) and conceptual challenges (e.g. balancing work and personal life) that are associated with the cultural and political factors (Henderson & Corry, 2021; Sanchez-Prieto et al., 2019). Researchers (le Roux et al., 2021) have also found MIM applications to be useful in establishing a learning community for academic purposes, where students share academic content through the functions that are available in MIM applications (e.g. sharing answers, texting to discuss about course content, posting course notes). Such *learning activities* allow students to utilise the texting, photo sharing, voice recording, and document sharing functions that are available through MIM applications (e.g. WhatsApp) to create an online learning community to that can positively impact students' academic performance.

Thus, some participants in this study were willing to adopt and adapt to using MIM applications with students due to the positive effects of using MIM applications to engage in learning activities such as 'snap and show,' 'tell me how I could improve this', and 'this is what I've done and how I've done it,' and

'think forward.' Mobile technologies have opened new ways of learning and instructors are realising the benefits of using mobile technologies to engage with students. Different forms of learning activities (as shown in this study) may motivate instructors to adapt and adopt MIM applications with students due to the convenience and advantages of reaching students through this mobile technology in the teaching and learning process.

In this study, the *cultural, political* and *learning activity* factors are reflected through themes that emerged from the data. Participants who were willing to adopt MIM applications with students, including those who were unwilling in principle, but use in practice, noted that the 3 factors (i.e., cultural, political, and learning activity) affected their decisions to use MIM applications with students. The participants' willingness to adopt led to their willingness to adapt to the use of MIM applications with students, in which participants navigated through the *cultural* and *political* factors in the process of adapting to using MIM applications with students (see Figure 13).

On the other hand, participants who were unwilling to adopt MIM applications with students also insisted on not adapting to using MIM applications with students. The *political* factor was apparent in affecting their decision of not adopting MIM applications with students, as participants perceived their role to be more superior and in control of their communication with students. Their unwillingness to adopt also led to their unwillingness to adapt to the use of MIM applications with students. However, the political factor did not only influence participants' decision of not adopting MIM applications with students but also appeared to be a means of navigating power relations between participants and students. Participants expected students to abide by the boundaries and rules of conduct that they had set in their relationship with students. Thus, the *political* factor was the main influence for participants who were unwilling to adopt nor adapt to using MIM applications with students (see Figure 14).

Based on these findings, two frameworks were developed. The first framework depicts that instructors who are willing to adopt due to cultural,

political, and learning activity factors will be led to adapt to using MIM applications with students. However, they will engage in political and cultural means of navigating the process of adapting to the use of MIM applications with students (see Figure 13). The second framework depicts that instructors who are unwilling to adopt MIM applications with students are influenced by the political factor of maintaining power over students in their profession. Thus, they will not be led to adapt to using MIM applications with students. Furthermore, they will exert power to ensure that students adapt to their rules and boundaries of not using MIM applications in the student-instructor relationship (i.e., political factor).

As shown in this study, 3 factors (i.e., *cultural*, *political*, and *learning activity*) appeared to be important predictors in influencing participants to willingly use MIM applications with students. This is an important indicator of factors that may potentially influence instructors to willingly adopt and adapt to using new technologies for teaching in HE. Therefore, I decided to further develop a set of questionnaires based on the themes that emerged from participants' responses from the data analysis, which can be used to quantitatively identify which factor might be the strongest predictor in influencing instructors' willingness to adopt and adapting to using MIM applications with students.

The questions for each factor (i.e., *cultural*, *political*, and *learning activity*) that influenced participants' willingness to adopt and adapt to using or not using MIM applications with students were derived from themes that emerged from participants' responses. In the data analysis stage, I discovered 83 codes that emerged from the initial coding process (see Appendix 5). Upon reaching the focused coding stage, the themes that emerged clearly separated participants into 3 categories (i.e., willing, unwilling in principle but used in practice, and unwilling) (see Figure 4). Upon completing the data analysis process and discovering 3 main factors that influenced participants' willingness to use or not use MIM applications with students, I began to identify the converged themes in the focused coding stage (see Figure 5) that fell into the 3 main factors (i.e., *cultural*, *political*, and *learning activity*) in order to develop questions for each

factor. Figure 15 indicated the process of categorising each theme into the 3 factors in order to develop questions for each factor for a quantitative survey.

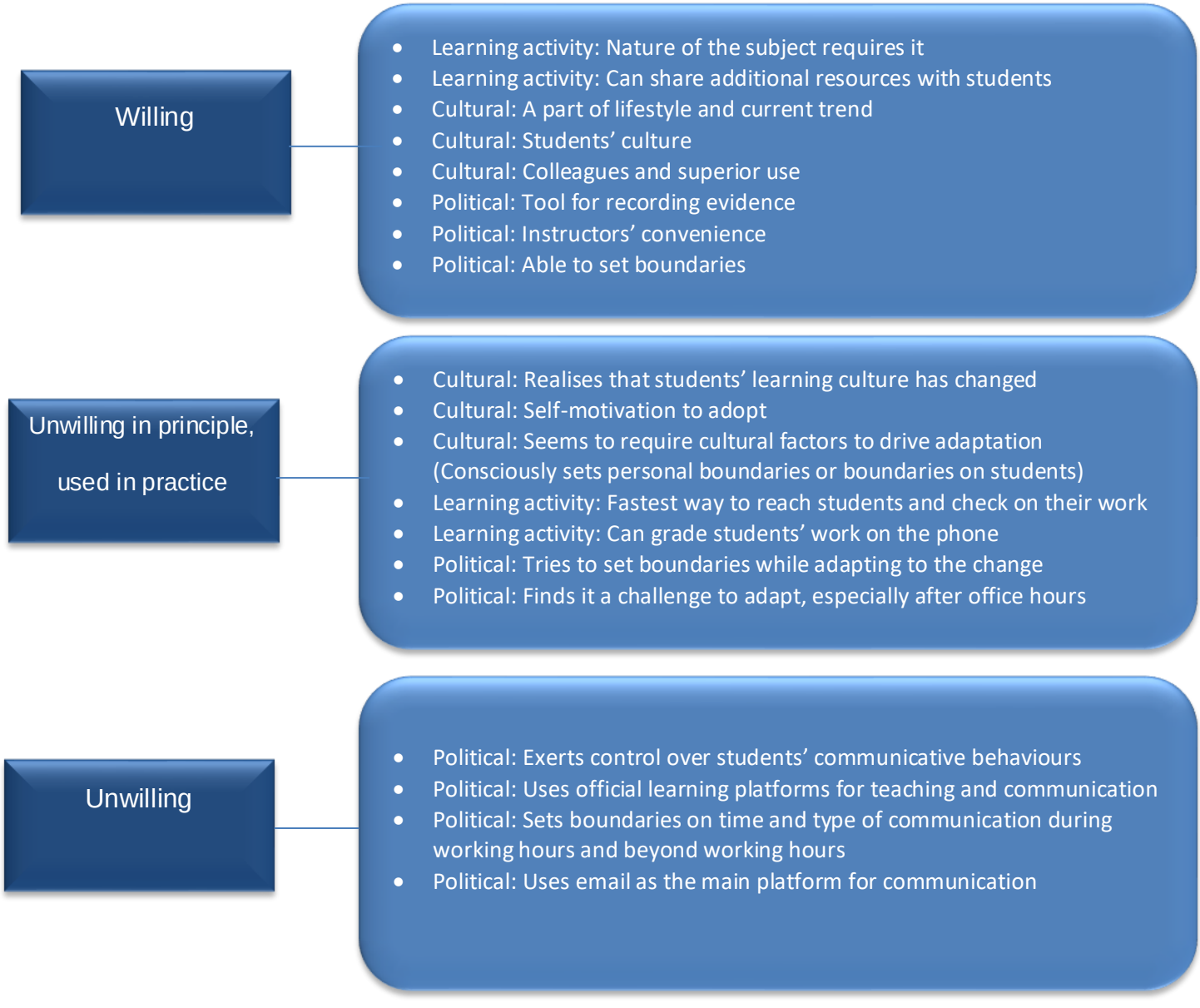


Figure 15: Developing Questionnaires for 3 Factors

As a result of the above analysis, a quantitative instrument to measure factors that influence instructors' willingness to adopt and adapt to using or not using MIM applications is proposed (Table 10). The Willingness to Adapt and Adopt MIM applications Scale (WAAMAS) is proposed to measure which factor (i.e., cultural, political, and learning activity) will most likely influence instructors' decisions to use or not use MIM applications with students.

Table 10: Willingness to Adapt and Adopt MIM Applications Scale (WAAMAS)

Please select the answer that best describes how you feel about each statement. Each statement begins with "I will use MIM for work because…"						
	Statements	**1 Strongly disagree**	**2 Somewhat disagree**	**3 Neither agree nor disagree**	**4 Somewhat agree**	**5 Strongly agree**
Political factor						
1	It is easy to reach students. (Willing)					
2	I can have a record of my communication with students. (Willing)					
3	I am able to set boundaries when I use it. (Willing & Unwilling but use)					
4	I am able to control the communication flow with students. (Unwilling but use)					

Statements		1 Strongly disagree	2 Somewhat disagree	3 Neither agree nor disagree	4 Somewhat agree	5 Strongly agree
5	Of the pressure from colleagues and superiors to use it. (Unwilling but use)					
6	My institution's policy requires for me to use it. (Unwilling but use)					
7	Of my professional role as an instructor to use it (Unwilling					
Cultural factor						
8	I use it in my everyday life. (Willing)					
9	Students use it in their everyday life (Willing & Unwilling but use)					
10	It is trendy to use it. (Willing)					
11	My colleagues are using it for work. (Willing)					

Statements		1 Strongly disagree	2 Somewhat disagree	3 Neither agree nor disagree	4 Somewhat agree	5 Strongly agree
12	Students are using it for learning. (Unwilling but use)					
13	I want to appear to be more approachable to students. (Unwilling but use)					
14	I can use it to counsel students. (Unwilling but use)					
Learning activity factor						
15	I can provide immediate feedback on students' assignments.					
16	I can share additional information and resources with students.					
17	I can correct and grade students' assignments on it.					
18	I am able to post materials to support students' learning.					

Statements		1 Strongly disagree	2 Somewhat disagree	3 Neither agree nor disagree	4 Somewhat agree	5 Strongly agree
19	Students are able to ask me how to improve their work immediately.					
20	Students can snap and show me images of what they have done and how they've done it.					

4.9.2 Political

Corbett and Rossman (1989) stated that the political factor concerns divergent interests of agents who are involved in the process of change within learning institutions, and how these individuals exert power or control over circumstances or people who are involved in the systemic change. In this study, two categories of participants (i.e., willing and unwilling in principle but use in practice) were influenced by the political factor in adopting the use of MIM applications with students. One of the main reasons for being willing to adopt the use of MIM applications with students was due to the application's convenience and flexibility. Participants could control communication with students according to their availability, regardless of their location. Furthermore, the use of MIM applications enabled participants to maintain a record of evidence in their communication with students, which they could use at their advantage.

Both categories of participants (i.e., willing and unwilling in principle but use in practice) also used the political factor to adapt to using MIM applications with students by setting boundaries. Adapting to the use of MIM applications was beneficial for participants, as they could exert control over students' communication with them. Participants perceived that students' behaviour of using MIM applications needed to be controlled by setting boundaries in the time of texting or responding to students' messages after office hours. Thus, having the power to set boundaries was perceived as a convenience for instructors to adapt to using MIM applications with students after office hours.

4.9.3 Cultural

The cultural factor was most apparent in influencing participants who were willing as well as unwilling in principle but use in practice in adopting and adapting to the use of MIM applications with students after office hours. Participants in these categories noted that assimilating to the current culture

and trend of using MIM applications for teaching was important, as students' learning culture has changed and the current trend of using MIM applications with personal as well as professional social networks cannot be ignored. Thus, participants felt the need to conform to the social pressure from their social networks, particularly for participants in the category of unwilling in principle but used in practice. However, a group of participants also expressed their reluctance to conform to the culture of using MIM applications with students. These unwilling participants desired to retain the existing culture of not adopting MIM applications with students and wanted students to change their behaviours and conform to the existing culture of not using MIM applications for academic purposes.

Systemic and behavioural changes are often influenced by culture, whereby individuals' beliefs and values affect their willingness and decisions to adopt new technologies within HEIs (Bakirtas & Akkas, 2020; Corbett & Rossman, 1989). Participants who chose to adopt MIM applications reluctantly embraced students' culture of using MIM applications for teaching and learning due to their sense of dedication in the profession. Participants in this study valued their profession and the responsibility that comes with it. Hence, they were dedicated to strengthen the instructor-student relationship and be fully engaged in their roles as instructors even though the role required further commitment for them to communicate with students beyond office hours. This sense of dedication was particularly apparent amongst participants in the category of willing to use MIM applications with students.

Brown (2016) noted that the "new traditional model" of incorporating new technology into face-to-face teaching is the upcoming culture and norm in HEIs. So, the culture of incorporating MIM applications into teaching and communicating with students is a factor that is influencing participants to adapt to using MIM applications with students after office hours. Introducing change amongst instructors can be challenging due to a change in their job responsibilities as well as the need to adopt new skills in integrating new

technologies on the job (Bresciani et al., 2009; Henderson & Corry, 2021). However, instructors cannot deny the changing trend of integrating MIM applications into their communication with students. Thus, there were participants who were unwilling to adopt and adapt to the use of MIM application with students after office hours, yet the cultural factor forced them to adapt and use them in practice.

4.9.4 Learning activity

Another factor that influenced participants to use MIM applications with students was the learning activity factor, whereby explaining course content and checking on students' work through MIM applications was more immediate and convenient. Students are able to engage in continuous learning with the use of MIM applications, as mobile technologies afford mobility and flexibility. Students are able to use their mobile devices to "snap and show" before sending the image to instructors for feedback (Passey, 2010). Participants in this study acknowledged that MIM applications provide room for semi-formal and immediate feedback rather than going through the formality of responding to students' work via email. Furthermore, participants can keep a record of their conversation with students and provide advice for students' learning immediately without having to respond through emails, which takes a longer time.

Besides convenience, WhatsApp enables a synchronous response between instructors and students when it comes to providing feedback on assignments or clarifying course content. Participants who were motivated to use MIM applications with students claimed that WhatsApp allowed them to be more engaged with students' learning, especially for participants in the category of willing to use MIM applications with students in comparison to participants who are in the category of unwilling in principle but use in practice. Participants who were willing to use WhatsApp with students were also avid users in utilising the MIM for grading or other forms of learning activities (i.e. sharing

additional information about course content). Participants in my study found the use of MIM applications to be effective in sharing information to engage students and cultivate an interactive approach to teaching and learning. Furthermore, participants also found MIM applications to be a form of support in enhancing the learner-centric approach on the job.

4.9.5 Technical

The technical factor neither deterred nor influenced participants to use MIM applications with students. Several participants cited challenges in trying to connect through the HEI's Internet network. However, the benefits of using MIM applications and new technologies outweighed the challenges of trying to connect to the HEI's wireless network connection (WiFi). Participants acknowledged that technical difficulty was not a major issue since new technologies, such as MIM applications, only require free WiFi to connect. Most public places provide WiFi and individuals are able to gain access through their mobile devices, regardless of time and location.

In addition, participants viewed the inability to connect to WiFi as a temporary challenge, which most often times occur in HEI premises but not at home. This challenge can be easily overcome in comparison to connecting with students for more engagement and immediacy in the teaching and learning process. The technical factor is a mechanistic way of improving instructors' jobs (Corbett & Rossman, 1986). As such, participants felt that MIM applications brought about positive rather than negative impact on the job. Students' learning experiences were more positive with good Internet connection (Chung & Mathew, 2020). Montiel et al. (2020) stated that technical challenges have almost become obsolete with many students adopting online learning and having access to mobile Internet data or other forms of Internet connectivity, more so in urban areas. Students do not necessarily require HEIs' wireless network connections to engage in online learning, as many have personal mobile data plans or other ways of connecting on the Internet (Chung &

Mathew, 2020). Therefore, the technical factor was not apparent in affecting instructors' willingness to adopt or adapt to using or not using MIM applications with students.

4.9.6 Summary of Chapter 4

In-depth interviews were conducted with 20 participants in this study, who were university-level instructors, to understand about their willingness to adopt and adapt to using or not using MIM applications with students. Findings in this study revealed 3 categories of participants in adopting and adapting to using or not using MIM applications with students, which were willing, unwilling in principle but used in practice, and unwilling. Three factors were found to influence participants' willingness or unwillingness to adopt and adapt to using or not using MIM applications with students, which were cultural, political, and learning activity. The cultural and political factors contributed towards participants' willingness to use MIM applications with students, including those who were unwilling to use in principle but used in practice. However, participants who were unwilling cited the political factor that deterred them from using MIM applications with students.

Willingness to adopt MIM applications led to willingness to adapt to the use of MIM applications with students. This appears to be true for participants who were in the categories of willing and unwilling to adopt in principle but used in practice. Participants who were unwilling to adopt in principle but adopted in practice revealed that the cultural, political, and learning activity factors influenced their willingness to use MIM applications in practice. Subsequently, these participants willingly adapted to the use of MIM applications influenced by cultural and political factors.

Hwang et al. (2021) noted that successful implementation of learning with mobile technologies should encompass all stakeholders involved in HE teaching and learning. In this study, the involvement of instructors in embracing

the culture of using MIM applications with students should be taken into consideration should HEIs require instructors to be more engaged with students through the use of MIM applications. Successful implementation of MIM use for student engagement and learning should be accompanied by HEI policies that set boundaries and etiquettes of use to avoid disruption in instructors' professional and personal lives.

Chapter 5: Conclusion

5.0 Introduction of the chapter

This chapter will discuss the summary of key findings in this study, the contribution of this study, limitations, future recommendations and implications of this study in the field of HE. Themes that emerged from the data revealed key factors that have caused instructors to shift their paradigms and ponder on traditional ways of teaching and learning. The cultural and political factors were apparent throughout the data of this study. Participants revealed that their sentiments of being willing to adopt and adapt to using MIM applications, as well as those who were unwilling to adopt nor adapt to using MIM applications, were influenced by cultural and political factors (see Chapter 4). Furthermore, the learning activity factor has also influenced instructors to reconsider their pedagogical methods of teaching and communicating with students in HE. The following sections will provide a summary of the aim of the study in addition to key current findings and discussion from participants' perspectives. Limitations of this study, future implications and recommendations for further research will also be discussed in this chapter. Subsequently, the original contribution to the body of knowledge for HE and HEI will be presented.

5.1 Limitations of the study

There are limitations in this study that could be addressed. While conducting this study, participants who initially took part in this study were recruited from my social network. Since I am a practitioner-researcher in this exploratory study, I tapped into my social network to recruit participants who were willing to participate. Subsequently, I used snowball sampling to recruit more participants from the initial participants whom I have contacted. As such, participants mostly stemmed from the fields of sciences and humanities (see Table 6: Profiles of participants) instead of other fields such as fine arts,

medicine and engineering. Nevertheless, this research did not indicate that sampling instructors across different fields of expertise was necessary, as the intention of this study was not to generalise the findings but rather to understand HE instructors' sentiments towards adopting and adapting to using or not using MIM applications with students after office hours. Even though participants stemmed from my social contacts and I am involved in the study as a practitioner-researcher, my involvement as a practitioner in the profession was necessary in the CGT method, as the researcher's reflexivity is required to form an understanding of the phenomenon in addition to the participants' perspectives (Charmaz, 2006).

Another limitation of this study is the single perspective that was only obtained from instructors rather than the entire systemic overview of other stakeholders across HEIs (e.g. administrative management, parents, and the government or policymakers). For example, interviewing individuals who held management positions may provide a different viewpoint on the use of MIM applications with students, which can potentially contribute to developing policies that are effective in enhancing teaching and learning experiences for both the instructor and students through the use of MIM applications. However, this exploratory study seeks to understand the instructors' perspectives first in order to gauge their sentiments on participating in a systemic change of integrating new technologies into their pedagogies within HEIs. With the growing use of mobile technologies in HEIs, instructors are one of the main stakeholders who will contribute to a successful change in adopting new technologies in teaching and learning in HE (Passey, 2010; Sánchez-Prieto et al., 2019; Stickney et al., 2019). Furthermore, past studies (Al-Senaidi et al., 2009; Atabek, 2020; Halupa & Bollinger, 2020; Nghiem Xuan, 2021; Panisoara et al., 2020; Shin & Jung, 2014) have indicated that instructors feel stressed out by the institutional change of needing to integrate new technologies in HE due to various factors. Therefore, understanding the instructors' perspectives and

willingness to adopt change and integrate new technologies into teaching was a priority in this study.

A final limitation in this study is the nature of CGT, in that it is situated with the interpretation given by participants in a given context. Meaning is constructed through the lenses of participants and interpreted by the researcher (Bryant & Charmaz, 2019; Charmaz, 2006, 2008; Charmaz & Thornberg, 2021). As such, data obtained in this study can arrive at a different conclusion if another researcher were to interpret it. As a novice researcher in CGT, I was also learning the skill of interviewing participants and planning for the research as I reflexively developed memos while gathering data. I attended training on interviewing participants for research and GT analysis to strengthen my knowledge and skills, which resulted in me conducting this study rigorously.

On the other hand, participant biasness can be a limitation in this study. Robinson (2014) noted that participants' self-selection bias occurs in interview research, whereby interviews tend to draw individuals who are more open, patient and interested in the topic to participate due to the nature of the research that requires individuals to openly self-disclose. As such, females are more likely to participate in interviews compared to men, which is also shown through the number of female versus male participants in this study (see Table 6). Such self-selection bias cannot be avoided. Furthermore, the HE industry generally attracts more females than males in the teaching profession, stated by researchers to be due to the nurturing qualities that an instructor in HE is expected to possess (Gutiérrez y Muhs, Niemann, González, Harris, & Gonzalez, 2012). Future research should explore the gender differences amongst academics in HE and their preferences to adopt MIM applications with students after office hours, as etiquettes of using MIM applications with students of an alternative gender after office hours may be a concern for certain cultures.

5.2 Summary of key findings

The aim of this study was to understand what factors would influence instructors' willingness to adopt and adapt to using or not using MIM applications with students, especially after office hours. The research questions that were posed in this study sought to answer (1) how political, cultural, technical, and learning activity affect instructors' willingness to adopt the use of MIM applications with students after office hours, and (2) how do instructors adapt to the change of using or not using MIM applications for teaching and communicating with students.

A total of 20 participants were recruited for this study and data were analysed using a CGT approach. Since this study stemmed from my professional experience of being an instructor at a HEI in Malaysia, the CGT approach allowed me to be a part of the research while maintaining flexibility in the interpretation and coding process. In CGT, Charmaz (2015) stated that the process of reflexivity helps the researcher engage in "methodological self-consciousness" (p.34), which proves to be necessary in enhancing and scrutinising the data in the process of data collection. Data analysis began with an inductive approach but subsequently moved to abduction, in which the abductive analysis allowed me to question how my data contains theoretical relevance through the process of data collection, memo writing, and data analysis (Tavory & Timmermans, 2018).

Findings of this study indicated 3 categories of participants, those who were (1) willing, (2) unwilling in principle, used in practice, and (3) unwilling to use MIM applications with students. In general, participants either adopted the use of MIM applications with students or refused to adopt the use of MIM applications with students. Three factors (i.e., cultural, political, and learning activity) were apparent in influencing participants to adopt and adapt to using MIM applications. The technical factor did not appear to influence participants to adopt nor adapt to using or not using MIM applications with students.

The current trend of integrating new technologies into teaching is more prevalent in today's HEI (Ajuwon et al., 2018; Oliveira et al., 2021; Zhu & Zhang, 2021). This has resulted in an unspoken pressure for instructors to jump onto the bandwagon of adopting new technologies or feel isolated if they do not conform to the culture. Tichy (1982) mentioned that change within institutions can occur due to demographic changes, as well as the non-traditional expectations in these demographic changes. In today's HE, students have been identified as digital natives (Janschitz & Penker, 2022). As the students' demographic evolves, instructors are expected to be more technologically savvy as the learning culture follows suit. Such changes of incorporating new technologies into the learning process call for a change in pedagogical methods in addition to adopting and adapting the technology.

Instructors in today's HE are influenced by various factors to conform to the current culture of teaching and learning with MIM applications, as the current generation of students are adept in using MIM applications for learning purposes besides connecting socially. In this study, the cultural factor is found to be an important aspect that pushed instructors to adopt MIM applications in this study if they did not want to feel outdated and left out from the current trend despite their reluctance to do so, particularly for participants in the category of unwilling in principle, but used in practice.

As for the political factor, institutional pressure (i.e., from superiors or peers) appeared to be a force that drove participants to adopt and adapt to using MIM applications. Participants felt the need to respond to students' messages after office hours, as management or the HEIs expected them to be more engaged with students. Besides responding to students' messages, participants in this study also cited their experiences of being pressured by peers and superiors to adopt the use of MIM applications for work. When higher authorities within HEIs impose an unspoken rule of using MIM applications as a means for communication, participants experience the process of negotiation and persuasion to adopt MIM applications even though they do not want to do

so in principle (i.e., participants in the category of unwilling in principle, but used in practice). Rossman et al. (1984) noted that the political process of adapting to change requires one to negotiate and bargain formally or informally before the change takes place within the institution.

In order to negotiate power and their roles as instructors in addition to being an employee, participants who adopted MIM applications willingly and reluctantly imposed rules of students' use of MIM applications with them after office hours by setting boundaries in their time of responding to messages. Since participants did not have the same temporal preference as students in using MIM applications after office hours, they felt the need to assert temporal boundaries over students' MIM use with them. Participants believed that by imposing such rules, they would have a work-life balance despite receiving pressure from the institution to be more engaging with students through the use of MIM applications. Due to the "unchallengeable mandate" (p.166) given to participants by their peers or superiors to adopt MIM applications for work purposes, participants decided to also impose the same mandate on students (Corbett & Rossman, 1989). Furthermore, participants are not interested to go beyond their work-life during personal time. Since participants and students have divergent interests (Corbett & Rossman, 1989), the boundaries of using MIM applications after working hours helped participants to "have their private life" (P12).

On the other hand, participants who were unwilling to adopt or adapt to using MIM applications with students cited the influence of the political factor, whereby they imposed their authority to curb students' behaviours of using MIM applications after office hours. Participants in this category mentioned that the relationship between students and instructors should be at a professional level rather than becoming more intimate and personal. The perception of using MIM applications for personal versus professional use affected participants' willingness to adopt and adapt to using MIM applications with students (Huang & Zhang, 2019; Sánchez-Prieto et al., 2019). Participants who were unwilling to

adopt viewed the MIM application (i.e., WhatsApp) as a tool for socialising. Hence, the use of MIM application for work was considered inappropriate, as it would interfere with their personal lives.

Indeed, participants who were unwilling to adopt MIM applications also argued for the need to maintain a work-life balance rather than being stressed out by students' messages after office hours. Bahri, Fauzi, and Ahmad (2020) argued that technology can create unnecessary stress for individuals in organisations when information that comes in through mobile technologies cannot be controlled. The technostress phenomenon occurs when individuals are unable to cope with information from work that floods their mobile devices, even beyond working hours. In this study, participants ensured that students changed their behaviours to adapt to participants' unwillingness to adopt MIM applications for teaching and learning purposes. The political move to exert control over students' use of MIM applications after office hours stemmed from the common practice of using MIM applications to communicate with others concerning work (Bahri et al., 2020). The ubiquity that MIM affords appears to be a technostress for participants who were unwilling to use MIM applications with students. Thus, participants opted to make students adapt to their preference of not using MIM applications for teaching and learning.

In terms of learning activity, participants who adopted the use of MIM applications noted that the MIM application provided convenience for teaching and learning although they were required to provide feedback for students' assignments after office hours. When students "snap and show" their work, participants found it convenient to respond through MIM applications immediately rather than waiting to meet with the students face-to-face in order to provide feedback. Li and Song (2018) found that appropriate use of smartphones as a learning tool supports instructors' new pedagogical methods and interaction with students. The speed that mobile technologies afford enables students to engage in immediate interactivity with instructors.

Learning activities such as “snap and show”, think forward,” “this is what I’ve done and how I’ve done it” and “tell me how I could improve this” require instructors and students to be involved in almost synchronous communication in order for students to feel more engaged in their learning. Thus, MIM offers the capability for instructors to be more engaging by providing immediate feedback on students’ assignments, giving instructions or urgent announcements, as well as sharing additional content pertaining to the course with students through smartphones. MIM applications also allow instructors to gauge higher participation rates, task completion and interaction from students (Tang & Hew, 2022).

The findings of this study showed that the majority of the participants were willing to use MIM applications with students in practice, despite some participants’ reluctance to adopt MIM applications with students, particularly after office hours. Even though these instructors are unwilling to adopt MIM applications in principle, they reckoned that MIM applications afforded flexibility, convenience, and effectiveness in engaging with students through the teaching and learning process. Thus, the benefits of using MIM applications outweighed their principle of not wanting to use MIM applications beyond office hours due to the need to obtain work-life balance. However, participants who were unwilling to use in practice but used in principle noted that MIM applications can potentially affect their work-life balance, in which participants are struggling to practice in their personal versus professional lives.

On the other hand, participants who were unwilling to use MIM applications with students do not want to venture into starting the practice. These participants perceive MIM applications as a social networking tool for their personal lives and choose to clearly distinguish their personal versus professional lives. Henderson and Corry (2021) attributed these participants’ resistance to adopt MIM applications with students as anxiety towards technology change. Furthermore, instructors who are unwilling to adopt MIM applications with students have been perceived as resistant to change. The

emotional response towards the adoption of new technologies involves instructors' needs to balance responsibilities that are beyond their profession. Thus, instructors view the adoption of MIM applications with students as not worth the risk to explore so that they can maintain a work-life balance. In this study, such negative affective responses from participants who were unwilling to adopt or adapt to using MIM applications with students resulted from negative personal experiences of using MIM applications with students in the past and resistance towards the change of integrating new technologies into their pedagogy (Henderson & Corry, 2021; Howard, 2013).

5.3 Contributions of the study

This study originated from my personal experience as a practitioner-researcher to understand instructors' perspectives on the use of MIM applications with students, specifically after office hours. Thus, I chose to examine this phenomenon through the CGT approach, which allows the researcher to take a reflexive stance while collecting data and asking emergent questions throughout the enquiry (Charmaz, 2017). This study contributes to the field of HE and MIM in three respects.

Firstly, this study proposes a framework that consists of factors (i.e., cultural, political, and learning activity) that have been found from the research to influence instructors' willingness to adopt and adapt to using or not using MIM applications with students. Data revealed that the technical factor is not as influential in comparison to the other factors (i.e. cultural, political, and learning activity); the latter factors that were more prevalent in influencing instructors' willingness to adopt and adapt to change (see Figures 13 & 14 in Chapter 4).

Consequently, the proposed framework does not include the technical factor. In this context, this is an important difference in comparison to findings from previous studies (Corbett & Rossman, 1986; Corbett & Rossman, 1989), which included this factor in examining the implementation of change in

schools. Findings from this study indicate that the *technical* aspect of new technology adoption may not appear to be an influential factor if institutions are to implement new technology adoption amongst employees. On the contrary, social and political aspects of adopting and adapting to the change of integrating digital technology on the job should be considered, particularly from the influence of cultural and political factors (e.g. peer pressure, supervisor demands, practices within organisational culture, and relevance of conforming to current technological trends on the job).

Employees' attitudes and perceptions towards embracing new changes within organisations are important elements in the effectiveness of implementing change (Sanchez-Prieto et al., 2019). Furthermore, embracing change is not only about technical aspects of adopting the change but it is about the sense of belonging in being a part of the change within the organisation, which is present when cultural and political factors are taken into consideration while introducing new changes within organisations. Change happens in HE settings, which requires actors of change to take part in implementing the change (Corbett & Rossman, 1989). In this study, instructors are actors of change. In order for instructors to adopt new technologies and adapt to the culture of using new technologies in their professions, influences of cultural, political and learning activity factors need to be examined and understood from the perspectives of actors of change.

Secondly, data from this study identified factors and features that led to the construction of a quantitative instrument. The purpose of this instrument would be to measure factors (i.e., cultural, political, and learning activity) that would emerge from future related studies, which can influence instructors' willingness to adopt and adapt to using or not using MIM applications in their profession. Past literature (Gupta et al., 2021; Hoi & Mu, 2021; Jia & Hew, 2022; Monica et al., 2021; Yasuda, 2021) have focused on students' perspectives on using MIM applications for learning, the advantages that MIM applications provide in promoting collaborative learning (Kukulska-Hulme &

Viberg, 2018; Sun et al., 2018; Tang & Bradshaw, 2020) and instructor's support that was provided through the use of MIM applications in students' learning processes (Cetinkaya, 2020; Guerrero-Higueras et al., 2020; Hoi & Mu, 2021; Todoranova, Nacheva, Sulov, & Penchev, 2020). However, past literatures on MIM applications have neglected to address instructors' perspectives in terms of their willingness to adopt or adapt to the use of MIM applications with students, especially from a qualitative perspective. A CGT approach has enabled me to understand the sentiments of instructors towards the use of MIM applications with students and build my analytical skills for theory construction while being involved in the study as a practitioner-researcher (Charmaz, 2015).

Data from this study contributed towards the construction of an instrument (i.e. WAAMAS) to identify and measure participants' willingness to adopt and adapt to using or not using MIM applications with students quantitatively. The WAAMAS scale will need to be piloted and validated for its reliability in future studies. Previous studies which examined factors that affected change as well as agents of change in schools (Corbett & Rossman, 1986, Corbett & Rossman, 1989; Rossman et al, 1984; Rossman et al., 1988; Passey, 2010) understood the factors from a qualitative perspective. The development of a quantitative instrument will provide additional data to confirm factors that will influence instructors' willingness to adopt and adapt to changes in schools (i.e., adopting new technologies such as MIM applications).

Participants who were unwilling to adopt MIM applications with students highlighted the political factor that influenced their decision as well as adaptation towards not using MIM applications. Corbett and Rossman (1986) highlighted that the political factor of implementing change involves power relations in altering behaviours. Since participants viewed their profession as more authoritative in classroom settings, they perceived that the use of MIM applications was for personal leisure and not work. Thus, participants were unwilling to allow students to cross the boundary of using MIM applications with

them due to divergent interests in the use of the mobile technology application (Rossman et al., 1988).

Even though the cultural factor is a major indication for instructors to embrace change and adapt to the use of MIM applications, there were participants who highlighted that the process of integrating MIM applications into their profession causes stress. While they were reluctant to adopt the use of MIM applications with students according to new cultural changes in learning, the learning activity factor motivated them to move towards the cultural influence of using MIM applications with students. Learning activities that begin in a university's classroom are often brought beyond the classroom setting with the convenience of mobile technologies in today's HE learning (Avram, 2017).

Thirdly, this study contributed towards providing a contemporary picture of the current perceptions and actions of Malaysian HE instructors towards the adoption of new technologies, such as MIM applications, with students. Findings from this study revealed that the *technical* factor's influence in technology adoption appears to be obsolete amongst the participants in this study. The aim of this study was to understand the perspectives of HE instructors in the use of MIM applications and their willingness to adopt as well as adapt to the technology in their profession. Individuals are likely to follow one of the three paths while implementing change in institutions. However, the *technical* factor did not appear to deter or encourage participants to embrace the use of MIM applications with students. Participants mentioned that technical support makes a difference in adopting MIM applications for teaching and learning but did not affect their decision to adopt or reject the use of MIM applications with students. Furthermore, technical challenges did not appear to be of major concern that deter them from adopting MIM applications with students amongst participants in this study.

On the other hand, the cultural and political factors were apparent in influencing instructors' willingness to adopt new technologies in their

profession. Even though participants in this study acknowledged that the learning culture has changed and mobile technology has erased the boundaries of work-life balance (Battard & Mangematin, 2013), findings from this study revealed that the cultural and political influences existed in influencing instructors to change from being unwilling to adopt MIM use with students in principle to being willing to adopt in practice. This study concurs with Corbett and Rossman's (1986) cultural and political pathways of implementing change in schools, whereby instructors cited both factors as influencers in their willingness to adopt and adapt to using MIM applications with students. Furthermore, the two factors were also adopted by participants in their adaptation towards using MIM applications with students.

Passey's (2010) learning activity factor that consists of 6 different learning activities also contributed to instructors' willingness to adopt MIM applications with students, as the use of mobile technologies affords convenience in certain learning activities (i.e., "Snap and show", "tell me how I could improve this", "this is what I've done and how I've done it" and "think forward"). MIM applications have been found to be suitable for certain learning activities such as sharing of information to enhance students' understanding of course materials and discussion of course assignments (Yasuda, 2021). In addition, MIM applications have also positively impacted instructors as well as students in teaching and learning engagement (Li & Song, 2018).

In order for instructors to embrace new technologies and adapt to students' current culture of learning with MIM applications, a systemic change is required, which incorporates the cultural and political and learning activity paths of implementing change in adopting MIM applications for teaching and learning. The change can only happen at a systemic level (Corbett & Rossman, 1986; Passey, 2010), whereby HEIs cultivate the culture of using MIM applications with boundaries. Participants in this study cited political factors in their reluctance to adopt MIM applications with students, as they perceived that the lack of boundary and policies in the use of MIM applications with students will

impede their personal lives. The effects of adopting MIM applications beyond office hours were considered to be detrimental for some participants in this study, in which they perceived that students lack boundaries and etiquettes in using MIM applications beyond office hours. Thus, the perception of mistrust on students' behaviour prevented some participants from embracing the use of MIM applications with students, especially after office hours.

Understanding instructors' reluctance to embrace new technologies in teaching is necessary to effectively integrate new technologies in HE settings, as instructors are agents of change in such contexts (Passey, 2010). Based on participants' responses in this study, institutional support in promoting effective policies that set boundaries on the use of synchronous mobile technologies such as MIM applications will change instructors' perspectives towards the adoption of MIM applications with students. As technology blurs the boundaries of personal and professional time of academics, it is up to the wider institutional system to set policies that will provide clear boundaries on the rules of using such mobile technologies and applications (Currie & Eveline, 2011).

Existing literature in the study of MIM applications for teaching is limited, as shown in Chapter 2. Thus, this study contributes to providing an understanding about the current views of instructors with regards to using MIM applications in their profession. From this study, it is apparent that the inevitable change of adopting new technologies, such as MIM applications, is seeping into the Malaysian HE context and changing the way that students learn, as well as how instructors are adapting towards this change in HE contexts.

This work is important because, by understanding instructors' sentiments towards adopting and adapting MIM applications, the teaching and learning process can be enhanced. In relation to theory, a framework that focuses on cultural, political, and learning activity factors is proposed. Furthermore, a questionnaire is created in order to obtain further quantitative data in more

widely understanding instructors' perspectives towards adopting MIM applications with students for teaching purposes.

In relation to practice, this study is important in addressing the cultural, political and learning activity aspects of implementing new technologies, such as MIM applications, into the HEI context. With the current change in learning culture, better policies can be formed to govern the use of mobile technologies in HE, particularly with the use of MIM applications that can be used synchronously or asynchronously. Students' learning experiences will also be enhanced if instructors are willing adopt and adapt to the changing culture of using MIM applications for teaching in HEIs.

This study has contributed to the existing literature by identifying key factors that will influence instructors' willingness to adopt new technologies in their profession should HEIs desire to implement new changes within the wider systemic level. The technical factor is no longer a reason why instructors adopt or reject new technologies, as the integration of new technologies in HE is becoming a cultural norm. In addition, this study contributed to proposing an instrument (i.e., WAAMAS) that can be used to identify and measure factors influencing instructors' willingness to adopt and adapt to using or not using MIM applications in their profession, which explores features that have not been identified from previous studies. Changes that take place at a wider systemic level should be implemented by focusing on the cultural and political factors that influence individual levels of acceptance in HEIs.

5.4 Future recommendations and implications of the study

The aim of this study was to understand instructors' perspectives towards adopting and adapting to using or not using MIM applications with students, especially after office hours. The research findings presented a total of 20 participants' interview responses towards adopting and adapting to using or not using MIM applications with students. Three factors (i.e., cultural,

political, learning activity) clearly influenced participants' willingness to adopt and adapt to using or not using MIM applications with students. Three categories of participants were generated from the findings of this study, which included participants who were willing, unwilling to use in principle, used in practice, and unwilling to adopt nor adapt to using MIM applications with students.

This study found that the cultural and political factors were apparent in influencing participants who were willing and unwilling in principle but used in practice. Even though participants adopted and adapted to using MIM applications with students, those in the category of unwilling in principle but used in practice indicated feelings of stress and pressure to adopt MIM applications due to cultural trends and expectations from individuals within HEIs to conform and adopt the MIM application. Participants who were unwilling to use in principle but used in practice also highlighted that the mobility and flexibility that MIM applications afforded motivated them to use MIM applications, especially when they needed to contact students for last minute instructions or provide urgent feedback on students' queries after office hours. Many tasks can be performed through smartphones, such as decision-making, grading assignments, communication or administrative tasks (Yun et al., 2012). Thus, the benefit of using MIM applications with students outweighs participants' principles of distinguishing the MIM applications for personal rather than professional use.

Maintaining a work-life balance is necessary for individuals who are in the teaching profession, particularly when the culture of using mobile technologies is more prevalent in today's HEI setting. When HEIs adopt a culture that supports segmentation of work and personal life of academics, instructors will be more willing to adopt and adapt to using MIM applications in HE (Yun et al., 2012). The change of integrating new technologies in the teaching profession can enhance students' learning experiences, as well as engage instructors to innovate their pedagogical skills and adapt to a positive

change of embracing new technologies in the profession. Thus, institutional policies need to be clearly devised and implemented to spell out boundaries and terms of using MIM applications should HEIs desire to see student engagement be enhanced through the use of MIM applications with instructors.

Future trainings that are provided for instructors should focus on the cultural and political factors that would influence technology adoption. Rohwer, Flother, Harth and Mache (2022) noted that it is important to pay attention to individuals' coping in the digitalisation of work. Adopting and adapting to new technologies can create stress in addition to the need to integrate new technologies into pedagogical methods. However, this study has found that the adoption and adaptation of using new technologies amongst instructors have moved beyond the technical factor to the cultural and political factors of adoption. Thus, future trainings of integrating new technologies into pedagogical methods can focus on the "softer" side of adapting to the use of new technologies in the adoption process.

Furthermore, mobile technology developers can consider integrating learning management systems with MIM applications to enhance instructor-student engagement. One of the findings in this study indicated that instructors were willing to use MIM applications with students due to certain learning activities that could be conducted through the application. Participants mentioned that students would "Snap and Show" and portray images of their work to participants. Students wanted to indicate to participants that "this is what I've done and how I've done it" in order for participants to tell students how to improve their work, which is another category of learning activity – "tell me how I could improve this."

Currently, MIM applications serve as a supplementary function for instructors to share information or for students to share images of assignments that they have produced (Yasuda, 2021). Integrating learning management systems with MIM applications (e.g. Blackboard and WhatsApp) may enhance

the teaching and learning experiences, considering that the former is a university-required platform while the latter is a current trend mobile application that is adopted widely by most stakeholders in HEIs. The integration of popular and convenient MIM applications, together with types of technological platforms that enhance learning should be considered carefully and aligned (Yasuda, 2021). The low cost of using MIM applications, which are mostly free and commonly used amongst individuals (Kaufmann, Peil, & Bork-Hüffer, 2021), coupled with commonly used learning platforms in HEIs, will require minimal adaptation from instructors and students as both platforms can be merged and mediated successfully to enhance both teaching and learning experiences in HEIs (Oliveira et al., 2021).

5.5 Concluding statement

This study has provided insights to instructors' willingness to adopt and adapt to using or not using MIM applications with students, which is a cultural trend that is occurring in today's HEIs. Participants' responses from the data revealed three lenses that formed the framework of this study, which were cultural, political, and learning activity factors of influence. The impact of cultural, political and learning activity factors was apparent in participants' responses towards using or not using MIM applications with students and their perspectives on the function of MIM applications in their personal versus professional lives. The technical factor appeared to have no influence over participants' willingness to adopt and adapt to using or not using MIM applications with student. In other words, the technical factor neither deterred nor encouraged instructors to adopt or adapt to using MIM applications with students. This study also discovered three categories of instructors in HE with regards to their willingness to adopt MIM applications with students: willing, unwilling in principle but used in practice, and unwilling.

Instructors face increasing pressure through cultural and political influences to adopt and adapt to the use of mobile technologies or applications

in HE. With the almost synchronous features of MIM applications and constant connectivity that MIM applications afford, institutional policies need to be spelled out clearly at a wider systemic level in order for instructors to have positive experiences of adopting and adapting to the use of new technologies in their pedagogy. The diverse interests of students versus instructors can cause instructors to feel overwhelmed with MIM applications intruding into their personal lives if policies are not clearly drawn out to set boundaries of usage. Thus, the diverse interests of relevant stakeholders in the implementation of change within HEIs need to be accommodated by setting guidelines that will benefit all parties.

A balanced work-life culture of integrating new technologies for effective teaching and learning can be cultivated if all agents of change at the wider systemic level within HEIs play their roles in ensuring appropriate policies, etiquettes and mutual understanding on the use of new technologies are set. Institutional support plays an important role in influencing instructors' willingness to adopt and adapt to the use of new technologies for teaching (Dumpit & Fernandez, 2017; Fathema et al., 2015). In line with current trends of using mobile technologies amongst HE students, instructors may well be driven more to use mobile technologies to form various learning activities that will enhance students' learning experiences. When political and cultural factors are taken into consideration at the wider systemic level of implementing new technology adoption, instructors will then be encouraged to adopt new technologies for teaching. Furthermore, the learning activity factor highlights benefits of adopting mobile technologies in teaching and learning, which is an important factor that is likely to positive motivate instructors to adopt and adapt to using mobile technologies in their profession. This study has shown that when instructors are willing to adopt, they will learn to adapt through the factors that lead them to adopt new technologies in HE.

References

Aaron, L., & Lipton, T. (2018). Digital distraction: Shedding light on the 21st-century college classroom. *Journal of Educational Technology Systems, 46*(3), 363-378. doi:10.1177/0047239517736876

Abdullah, N., Mohamed, S., Abu Bakar, K., & Satari, N. (2022). The influence of sociodemographic factors on mobile device use among young children in Putrajaya, Malaysia. *Children, 9,* 1-17. https://doi.org/10.3390/children9020228

Abdullah, F., Ward, R., & Ahmed, E. (2016). Investigating the influence of the most commonly used external variables of TAM on students' Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of e-portfolios. *Computers in Human Behavior, 63*, 75-90. doi:10.1016/j.chb.2016.05.014

Abiodun, R., Daniels, F., Pimmer, D. C., & Chipps, J. (2020). A WhatsApp community of practice to support new graduate nurses in South Africa. *Nurse Education in Practice, 46*, 102826-102826. doi:10.1016/j.nepr.2020.102826

Ahad, A. D., & Lim, S. M. A. (2014). *Convenience or nuisance?: The 'WhatsApp' dilemma.* Paper presented at the *Procedia - Social and Behavioral Sciences, 155*, 189-196.

Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education, 11*. doi:10.1016/j.iheduc.2008.05.002

Ajuwon, A., Pimmer, C., Odetola, T., Gröhbiel, U., Oluwasola, O., & Olaleye, O. (2018). Mobile instant messaging (MIM) to support teaching practice: insights from a nurse tutor program in Nigeria. *Malawi Medical Journal, 30*(2), 120-126. doi:10.4314/mmj.v30i2.12

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.

Al-Emran, M., Elsherif, H. M., & Shaalan, K. (2016). Investigating attitudes towards the use of mobile learning in higher education. *Computers in Human Behavior, 56*, 93-102. doi:10.1016/j.chb.2015.11.033

Alghazi, S. S., Wong, S. Y., Kamsin, A., Yadegaridehkordi, E., & Shuib, L. (2020). Towards sustainable mobile learning: A brief review of the factors influencing acceptance of the use of mobile phones as learning tools. *Sustainability, 12*(24), 1-19. https://doi.org/10.3390/su122410527

Al-Hunaiyyan, A., Alhajri, R. A., & Al-Sharhan, S. (2018). Perceptions and challenges of mobile learning in Kuwait. *Journal of King Saud University - Computer and Information Sciences, 30*(2), 279-289. doi:10.1016/j.jksuci.2016.12.001

Almaiah, M. A., Alamri, M. M., & Al-Rahmi, W. (2019). Applying the UTAUT model to explain the students' acceptance of mobile learning system in higher education. *IEEE Access*, *7*, 174673-174686. https://doi.org/10.1109/ACCESS.2019.2957206

Al-Rahmi, W. M., Alias, N., Othman, M. S., Marin, V. I., & Tur, G. (2018). A model of factors affecting learning performance through the use of social media in Malaysian higher education. *Computers & Education, 121*, 59-72. doi:https://doi.org/10.1016/j.compedu.2018.02.010

Al-Senaidi, S., Lin, L., & Poirot, J. (2009). Barriers to adopting technology for teaching and learning in Oman. *Computers & Education, 53*(3), 575-590. doi:10.1016/j.compedu.2009.03.015

Ali, R. M., Mahomed, A. S. B., Yusof, R. N. R., Khalid, H., & Afzal, M. I. (2019). Hey there! I am using WhatsApp: A study on the levels and patterns of WhatsApp's official usage among Malaysian university academicians *International Journal of Asian Social Science, 9*(12), 657-671. doi:10.18488/journal.1.2019.912.657.671

Alturki, U., & Aldraiweesh, A. (2022). Students' perceptions of the actual use of mobile learning during COVID-19 pandemic in higher education. *Sustainability, 14*(3), 1125. doi:10.3390/su14031125

Alwi, N. H. M., Mahir, N. A., & Ismail, S. (2014). *Infusing social media in teaching and learning (TnL) at tertiary institutions: A case of effective communication in Universiti Sains Islam Malaysia (USIM).* Paper presented at the Procedia - Social and Behavioral Sciences. Langkawi, Malaysia.

Amry, A. B. (2014). The impact of WhatsApp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal, 10*(22), 116-136.

Andújar-Vaca, A., & Cruz-Martínez, M.-S. (2017). Mobile instant messaging: Whatsapp and its potential to develop oral skills. *Comunicar (Huelva, Spain), 25*(50), 43-52. doi:10.3916/C50-2017-04

Andujar, A. (2016). Benefits of mobile instant messaging to develop ESL writing. *System, 62*, 63-76. doi:10.1016/j.system.2016.07.004

Andujar, A. (2020). Mobile-mediated dynamic assessment: A new perspective for second language development. *ReCALL, 32*(2), 178-194. doi:10.1017/S0958344019000247

Atabek, O. (2020). Experienced educators' suggestions for solutions to the challenges to technology integration. *Education and Information Technologies, 25*(6), 5669-5685. doi:10.1007/s10639-020-10243-y

Ataro, G. (2020). Methods, methodological challenges and lesson learned from phenomenological study about OSCE experience: Overview of paradigm-driven qualitative approach in medical education. *Annals of Medicine and Surgery, 49*, 19-23. doi:https://doi.org/10.1016/j.amsu.2019.11.013

Atkins, L., & Wallace, S. (2012). *Qualitative research in education*. Thousand Oaks, CA: Sage Publications.

Avram, E. M. (2017). New forms of interaction in higher education. *SEA: Practical Application of Science*(15), 427-436.

Azizi, S. M., & Khatony, A. (2019). Investigating factors affecting on medical sciences students' intention to adopt mobile learning. *BMC Medical Education, 19*(1), 381-381. https://doi.org/10.1186/s12909-019-1831-4

Badwelan, A., Drew, S., & Bahaddad, A. A. (2016). Towards acceptance M-learning approach in higher education in Saudi Arabia. *International Journal of Business and Management, 11*(8), 12. doi:10.5539/ijbm.v11n8p12

Baek, Y., Zhang, H., & Yun, S. (2017). Teachers' attitudes toward mobile learning in Korea. *Turkish Online Journal of Educational Technology, 16*(1), 154-163.

Bagozzi, R. P. (2007). The legacy of the technology acceptance model and a proposal for a paradigm shift. *Journal of the Association for Information Systems, 8*(4), 244-254. doi:10.17705/1jais.00122

Bahri, S., Fauzi, A., & Ahmad, N. S. (2020). A communication overload scale for use with mobile instant messaging in work management. *Digital Business, 1*(1), 100003. doi:10.1016/j.digbus.2021.100003

Bakirtas, H., & Akkas, C. (2020). Technology readiness and technology acceptance of academic staffs. *International Journal of Management Economics and Business, 16*(4), 1043-1058. doi:10.17130/ijmeb.853629

Baran, E. (2014). A review of research on mobile learning in teacher education. *Educational Technology & Society, 17*(4), 17-32.

Barkley, J. E., & Lepp, A. (2016). Mobile phone use among college students is a sedentary leisure behavior which may interfere with exercise. *Computers in Human Behavior*, *56*, 29-33. https://doi.org/10.1016/j.chb.2015.11.001

Batmetan, J. R., & Palilingan, V. R. (2018). Higher education students' behaviour to adopt mobile learning. *IOP Conf. Series: Materials Science and Engineering, 306*(1), 12067. doi:10.1088/1757-899X/306/1/012067

Battard, N., & Mangematin, V. (2013). Idiosyncratic distances: Impact of mobile technology practices on role segmentation and integration. *Technological Forecasting and Social Change, 80*(2), 231-242. doi:https://doi.org/10.1016/j.techfore.2011.11.007

Bayless, M. L., Clipson, T. W., & Wilson, S. A. (2013). Faculty perceptions and policies of students' use of personal technology in the classroom. *Faculty Publications*, Paper 32.

Bere, A., & Rambe, P. (2016). An empirical analysis of the determinants of mobile instant messaging appropriation in university learning. *Journal of Computing in Higher Education, 28*(2), 172-198. doi:10.1007/s12528-016-9112-2

Berry, M. J., & Westfall, A. (2015). Dial D for distraction: The making and breaking of cell phone policies in the college classroom. *College Teaching, 63*(2), 62-71. doi:10.1080/87567555.2015.1005040

Biddix, J. P., Chung, C. J., & Park, H. W. (2015). The hybrid shift: Evidencing a student-driven restructuring of the college classroom. *Computers & Education, 80*, 162-175. doi:https://doi.org/10.1016/j.compedu.2014.08.016

Bidin, S., & Ziden, A. A. (2013). Adoption and application of mobile learning in ithe education Industry. *Procedia - Social and Behavioral Sciences, 90,* 720-729.

Blaikie, N., & Priest, J. (2017). *Social research: Paradigms in action*. Chicester: Polity Press.

Bond, M., Marín, V. I., Dolch, C., Bedenlier, S., & Zawacki-Richter, O. (2018). Digital transformation in German higher education: student and teacher perceptions and usage of digital media. *International Journal of*

Educational Technology in Higher Education, 15(1), 1-20. https://doi.org/10.1186/s41239-018-0130-1

Bouhnik, D., & Deshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research, 13*, 217-231.

Bresciani, M. J., Griffiths, J. H., & Rust, J. P. (2009). Assessment at North Carolina State University: Adapting to change in the workplace. *Research & Practice in Assessment, 4*, 4-12.

Briz-Ponce, L., Pereira, A., Carvalho, L., Juanes-Méndez, J. A., & García-Peñalvo, F. J. (2017). Learning with mobile technologies – Students' behavior. *Computers in Human Behavior, 72*, 612-620. doi.org/10.1016/j.chb.2016.05.027

Broadbent, J., & Lodge, J. (2021). Use of live chat in higher education to support self-regulated help seeking behaviours: a comparison of online and blended learner perspectives. *International Journal of Educational Technology in Higher Education, 18*(1), 17-17. doi:10.1186/s41239-021-00253-2

Brod, C. (1984). How to Deal with 'Technostress'. *Office Administration and Automation, 45*(8), 28.

Brown, M. G. (2016). Blended instructional practice: A review of the empirical literature on instructors' adoption and use of online tools in face-to-face teaching. *The Internet and Higher Education, 31*, 1-10. doi:10.1016/j.iheduc.2016.05.001

Bryant, A., & Charmaz, K. (2019). *The SAGE Handbook of Current Developments in Grounded Theory*. Thousand Oaks, CA: Sage.

Buabeng-Andoh, C. (2020). Exploring university students' intention to use mobile learning: A research model approach. *Education and Information Technologies, 26*(1), 241-256. https://doi.org/10.1007/s10639-020-10267-4

Buchanan, T., Sainter, P. & Saunders, G. (2013). Factors affecting faculty use of learning technologies: Implications for models of technology adoption. *Journal of Computing in Higher Education, 25*(1), 1-11.

Cardoso-Leite, P., Green, C. S., & Bavelier, D. (2015). On the impact of new technologies on multitasking. *Developmental Review, 35*, 98-112. doi:10.1016/j.dr.2014.12.001

Carisma, N., & Elma, M. (2020). Preservice teachers use of WhatsApp to explain subject content to school children during the COVID-19 pandemic. *International Journal of Work - Integrated Learning, 21*(5), 629-641.

Cetinkaya, L. (2017). The impact of WhatsApp use on success in education process. *International Review of Research in Open and Distributed Learning, 18*(7), 59-74.

Cetinkaya, S. E. (2020). Bringing classroom and outside world together: Mobile instant messaging via WhatsApp for extracurricular writing. *Qualitative Report, 25*(12), 4319-4351.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis. Thousand Oaks, CA*: Sage.

Charmaz, K. (2008). Grounded theory. In J. A. Smith (Ed.), *Qualitative psychology: A practical guide to research methods* (2nd ed., pp. 81-110). London: Sage.

Charmaz, K. (2015). Teaching theory construction with initial Grounded Theory tools: A reflection on lessons and learning. *Qualitative Health Research, 25*(12), 1610-1622. doi:10.1177/1049732315613982

Charmaz, K. (2017). The Power of Constructivist Grounded Theory for critical inquiry. *Qualitative Inquiry, 23*(1), 34-45. doi:10.1177/1077800416657105

Charmaz, K. (2020). “With Constructivist Grounded Theory you can’t hide”: Social justice research and critical inquiry in the public sphere. *Qualitative Inquiry, 26*(2), 165-176. doi:10.1177/1077800419879081

Charmaz, K., & Belgrave, L. (2012). Qualitative interviewing and grounded theory analysis. In J. F. GubriumJ. A. Holstein, & A. B. Marvasti. *The SAGE Handbook of Interview Research: The Complexity of The Craft* (pp. 347-366). SAGE Publications. doi.org/10.4135/9781452218403.n25

Charmaz, K., & Thornberg, R. (2021). The pursuit of quality in grounded theory. *Qualitative Research in Psychology, 18*(3), 305-327. doi:10.1080/14780887.2020.1780357

Chee, K. N., Yahaya, N., Ibrahim, N. H., & Hasan, M. N. (2017). Review of mobile learning trends 2010–2015: A meta-analysis. *Journal of Educational Technology & Society, 20*(2), 113–126.

Chen, Q., & Yan, Z. (2016). Does multitasking with mobile phones affect learning? A review. *Computers in Human Behavior, 54*, 34-42. doi:10.1016/j.chb.2015.07.047

Cheon, J., Lee, S., Crooks, S., & Song, J. (2012). An investigation of mobile learning readiness in higher education based on the Theory of Planned Behavior. *Computers & Education, 59*. 1054-1064. doi:10.1016/j.compedu.2012.04.015

Cheung, R., & Vogel, D. (2013). Predicting user acceptance of collaborative technologies: An extension of the technology acceptance model for e-learning. *Computers & Education, 63*, 160-175. doi:https://doi.org/10.1016/j.compedu.2012.12.003

Cho, J., Lee, H. E., & Kim, H. (2019). Effects of communication-oriented overload in mobile instant messaging on role stressors, burnout, and turnover intention in the workplace. *International Journal of Communication, 13*, 1743–1763.

Christensen, R., & Knezek, G. (2017). Readiness for integrating mobile learning in the classroom: Challenges, preferences and possibilities. *Computers in Human Behavior, 76*, 112-121. doi:10.1016/j.chb.2017.07.014

Chua, P. Y., Rezaei, S., Gu, M.-L., Oh, Y., & Jambulingam, M. (2018). Elucidating social networking apps decisions. *Nankai Business Review International, 9*(2), 118-142. https://doi.org/10.1108/nbri-01-2017-0003

Chun Tie, Y., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE Open Med, 7*, 1-8. doi:10.1177/2050312118822927

Chung, C.-J., Hwang, G.-J., & Lai, C.-L. (2019). A review of experimental mobile learning research in 2010–2016 based on the Activity Theory framework. *Computers & Education, 129*, 1-13. https://doi.org/10.1016/j.compedu.2018.10.010

Chung, E., & Mathew, V. N. (2020). Satisfied with online learning amidst COVID-19, but do you intend to continue using it? *Journal of Academic Research in Progressive Education and Development, 9*(4), 67-77. doi:10.6007/IJARPED/v9-i4/8177

Cohen, A. (2009). Individual values and the work/family interface: An examination of high tech employees in Israel. *Journal of Managerial Psychology, 24*(8), 814-832. doi:10.1108/02683940910996815

Conde, M. Á., Rodríguez-Sedano, F. J., Rodríguez-Lera, F. J., Gutiérrez-Fernández, A., & Guerrero-Higueras, Á. M. (2020). Assessing the individual acquisition of teamwork competence by exploring students' instant messaging tools use: the WhatsApp case study. *Universal Access in the Information Society, 20*(3), 441-450. doi:10.1007/s10209-020-00772-1

Corbett, H. D., & Rossman, G. B. (1986). *Fanfare and Failure: Pathways to implementing change*. Annual 67th Meeting of the American Educational Research Association, San Francisco, CA.

Corbett, H. D., & Rossman, G. B. (1989). Three paths to implementing change: A research note. *Curriculum Inquiry, 19*(2), 163-190. doi:10.1080/03626784.1989.11075322

Cornejo-Araya, C. A., & Kronborg, L. (2021). Inspirational teachers' model: A Constructivist Grounded Theory study in gifted education. *Journal for the Education of the Gifted, 44*(3), 300-326. doi:10.1177/01623532211023595

Cremades, R., Onieva-López, J. L., Maqueda-Cuenca, E., & Ramírez-Leiton, J. J. (2019). The influence of mobile instant messaging in language education: perceptions of current and future teachers. *Interactive Learning Environments*, 1-10. doi:10.1080/10494820.2019.1612451

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed method approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (Fourth edition. ed.). Thousand Oaks, CA: Sage Publications.

Currie, J., & Eveline, J. (2011). E-technology and work/life balance for academics with young children. *Higher Education, 62*, 533-550. doi:10.1007/s10734-010-9404-9

Dahui, L., Patrick, Y. K. C., & Hao, L. (2005). Understanding individual adoption of instant messaging: An empirical investigation. *Journal of the Association for Information Systems, 6*(4), 1.

David, M. K., & Dumanig, F. P. (2017). Language policy and research on technological developments in English language teaching in Malaysia. *Language in India, 17*(2), 85-100.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340. doi:10.2307/249008

Davison, C. B., & Lazaros, E. J. (2015). Adopting mobile technology in the higher education classroom. *Journal of Technology Studies, 41*(1), 30-39.

DeWitt, D., Naimie, Z., & Siraj, S. (2013). Technology applications used by first year undergraduates in a Malaysian public university*. Procedia - Social and Behavioral Sciences, 103,* 937-945..

Dhir, A., Kaur, P., Chen, S., & Pallesen, S. (2019). Antecedents and consequences of social media fatigue. *International Journal of Information Management, 48*, 193-202. doi:10.1016/j.ijinfomgt.2019.05.021

Dinsmore, B. (2019). Contested affordances: teachers and students negotiating the classroom integration of mobile technology. *Information, Communication & Society, 22*(5), 664-677. https://doi.org/10.1080/1369118X.2019.1568518

Dixon, S. (2022, July 27). *Most popular global mobile messenger apps as of January 2022, based on number of monthly active users*. Social media and user-generated content. https://www.statista.com/statistics/258749/most-popular-global-mobile-messenger-apps/

Doering, A., Cynthia, L., George, V., & Nichols-Besel, K. (2008). Preservice teachers' perceptions of instant messaging in two educational contexts. *Journal of Computing in Teacher Education, 25*(1), 5-12. https://doi.org/10.1080/10402454.2008.10784603

Domingo, M. G., & Garganté, A. B. (2016). Exploring the use of educational technology in primary education: Teachers' perception of mobile technology learning impacts and applications' use in the classroom. *Computers in Human Behavior, 56*, 21-28. doi.org/10.1016/j.chb.2015.11.023

Dukic, Z., Chiu, D. K. W., & Lo, P. (2015). How useful are smartphones for learning _Perceptions and practices of library and info science students from HK and Japan. *Library Hi Tech, 33*(4), 545-561. https://doi.org/http://dx.doi.org.ezproxy.lancs.ac.uk/10.1108/LHT-02-2015-0015

Dumpit, D. Z., & Fernandez, C. J. (2017). Analysis of the use of social media in Higher Education Institutions (HEIs) using the Technology Acceptance Model. *International Journal of Educational Technology in Higher Education, 14*(1), 1-16. doi:10.1186/s41239-017-0045-2

Eberle, T. (2013). Phenomenology as a research method. In U. Flick (Ed.), *The SAGE Handbook of Qualitative Data Analysis* (pp.186-202). Thousand Oaks, CA: Sage Publications Ltd.

Elhay, A. A., & Hershkovitz, A. (2018). Teachers' perceptions of out-of-class communication, teacher-student relationship, and classroom environment. *Education and Information Technologies, 24*(1), 385-406. https://doi.org/10.1007/s10639-018-9782-7

Emanuela Maria, A. (2017). New forms of interaction in higher education. *SEA: Practical Application of Science (15)*, 427-436.

Enyama, D., Balti, E. V., Simeni Njonnou, S. R., Ngongang Ouankou, C., Kemta Lekpa, F., Noukeu Njinkui, D., Fouogue, J. T., Mayouego Kouam, J., Njateng, G. S. S., Kenfack, B., Watcho, P., & Choukem, S. P. (2021). Use of WhatsApp, for distance teaching during COVID-19 pandemic: Experience and perception from a sub-Saharan African setting. *BMC Medical Education, 21*(1), 1-517. https://doi.org/10.1186/s12909-021-02953-9

Eppard, J., Hojeij, Z., Ozdemir-Ayber, P., Rodjan-Helder, M., & Baroudi, S. (2019). Using mobile learning tools in higher education: A UAE Case. *International Journal of Interactive Mobile Technologies, 13*(11), 51-69. doi:10.3991/ijim.v13i11.10823

Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & Education, 59*(2), 423-435. doi:10.1016/j.compedu.2012.02.001

Fathema, N., Shannon, D., & Ross, M. (2015). Expanding the Technology Acceptance Model (TAM) to examine faculty use of Learning Management Systems (LMSs) in Higher Education Institutions. *Journal of Online Learning and Teaching, 11*(2), 210-232.

Flick, U. (2018). *Doing grounded theory*. Thousand Oaks, CA: Sage Publications Ltd.

Florenthal, B. (2019). Students' motivation to participate via mobile technology in the classroom: A Uses and Gratifications approach. *Journal of*

Marketing Education, 41(3), 234-253. https://doi.org/10.1177/0273475318784105

Forkosh-Baruch, A., & Hershkovitz, A. (2017). Broadening communication yet holding back: Teachers' perceptions of their relationship with students in the SNS-era. *Education and Information Technologies, 23*(2), 725-740. https://doi.org/10.1007/s10639-017-9632-z

Forsey, M. (2012). Interviewing individuals. In S. Delamont (Ed.), *Handbook of qualitative research in education* (pp. 364-376). Cheltenham: Edward Elgar.

Fryer, L. K., & Bovee, H. N. (2016). Supporting students' motivation for e-learning: Teachers matter on and offline. *The Internet and Higher Education, 30*, 21-29. doi:https://doi.org/10.1016/j.iheduc.2016.03.003

Fu, Q.-K., & Hwang, G.-J. (2018). Trends in mobile technology-supported collaborative learning: A systematic review of journal publications from 2007 to 2016. *Computers & Education, 119*, 129-143. doi:https://doi.org/10.1016/j.compedu.2018.01.004

Galletta, A., & Cross, W. E. (2013). Conducting the interview: The role of reciprocity and reflexivity. In *Mastering the Semi-Structured Interview and Beyond* (pp. 75-118). New York, NY: NYU Press.

Galletta, A., & Cross, W. E. (2013). The semi-structured interview as a repertoire of possibilities. In *Mastering the Semi-Structured Interview and Beyond* (pp. 45-72). New York, NY: NYU Press.

Gan, C. L., & Balakrishnan, V. (2016). An empirical study of factors affecting mobile wireless technology adoption for promoting interactive lectures in higher education. *International Review of Research in Open and Distributed Learning, 17*(1), 214-239.

Ganasegeran, K., Renganathan, P., Rashid, A., & Al-Dubai, S. A. (2017). The m-Health revolution: Exploring perceived benefits of WhatsApp use in clinical practice. *International Journal of Medical Informatics, 97*, 145-151. doi:10.1016/j.ijmedinf.2016.10.013

Gant, D., Kiesler, S. (2002). Blurring the boundaries: Cell phones, mobility, and the line between work and personal life. In: Brown, B., Green, N., Harper, R. (eds). *Wireless World. Computer Supported Cooperative Work*. London: Springer. https://doi.org/10.1007/978-1-4471-0665-4_9

Garcia Moreno, J. M. (2021). Mobile life and family. The impact of ICTs on spatial-geographic mobility. *Population Space and Place, 27*(8), doi.org/10.1002/psp.2454

Genevieve, L., Arthur, S., & Dongcheol, H. (2019). The regulation of learning and co-creation of new knowledge in mobile learning. *Knowledge Management & E-learning, 11*(4), 449-484. doi:10.34105/j.kmel.2019.11.024

Gikas, J., & Grant, M. (2013). Mobile computing devices in higher education: Student perspectives on learning with cellphones, smartphones & social media. *Internet and Higher Education, 19,* 18-26. doi:10.1016/j.iheduc.2013.06.002

Gil de Zúñiga, H., Ardèvol-Abreu, A., & Casero-Ripollés, A. (2021). WhatsApp political discussion, conventional participation and activism: exploring direct, indirect and generational effects. *Information, Communication & Society, 24*(2), 201-218. doi:10.1080/1369118X.2019.1642933

Glaser, & Strauss, Anselm L. (1967). *The discovery of grounded theory : Strategies for qualitative research*. Place of publication: Aldine Pub.

Gronseth, S., & Hebert, W. (2018). GroupMe: Investigating the use of mobile instant messaging in higher education courses. *TechTrends, 63*(3), 15-22.

Guerrero-Higueras, Á. M., Sánchez-González, L., Conde-González, M. Á., & Castejón-Limas, M. (2020). Facilitating the learning process in parallel computing by using instant messaging. *The Journal of Supercomputing, 77*(4), 3899-3913. doi:10.1007/s11227-020-03416-6

Gupta, Y., Khan, F. M., & Agarwal, S. (2021). Exploring factors influencing mobile learning in higher education: A systematic review. *International Journal of Interactive Mobile Technologies, 15*(12), 140-157. doi:10.3991/ijim.v15i12.22503

Gutiérrez y Muhs, G., Niemann, Y. F., González, C. G., Harris, A. P., & Gonzalez, C. G. (2012). *Presumed Incompetent : The Intersections of Race and Class for Women in Academia*. Logan, CO: University Press of Colorado.

Halupa, C., & Bolliger, D. U. (2020). Technology fatigue of faculty in higher education. *Journal of Education and Practice, 11*(18), 16-26.

Hamidi, H., & Chavoshi, A. (2018). Analysis of the essential factors for the adoption of mobile learning in higher education: A case study of students

of the University of Technology. *Telematics and Informatics, 35*(4), 1053-1070. doi.org/10.1016/j.tele.2017.09.016

Han, S., Min, J., & Lee, H. (2015). Antecedents of social presence and gratification of social connection needs in SNS: A study of Twitter users and their mobile and non-mobile usage. *International Journal of Information Management, 35*(4), 459-471. doi:10.1016/j.ijinfomgt.2015.04.004

Haywood, D., Haywood, J., Joyce, A., & Timmis, S., Tredgold, J., Pérez, I., Duim, L., Mrose, N., Rajagopal, K., Verjans, S., & Baldry, A., Marenzi, I., Zanca, C., Valk, A., Lappalainen, M., Devaux, A., & Knudsen, I., & Sonveaux, N. (2007). *Student Mobility in a Digital World*: *Final Report of the VICTORIOUS Project*. The Scottish Centre for research into On-Line Learning & Assessment (SCROLLA). https://thinking.is.ed.ac.uk/jeffhaywood/wp-content/uploads/sites/7/2015/12/VIC-Final-Report-V6.pdf

Heflin, H., Shewmaker, J., & Nguyen, J. (2017). Impact of mobile technology on student attitudes, engagement, and learning. *Computers & Education, 107*, 91-99. https://doi.org/10.1016/j.compedu.2017.01.006

Heijstra, T. M., & Rafnsdottir, G. L. (2010). The Internet and academics' workload and work–family balance. *The Internet and Higher Education, 13*(3), 158-163. doi:https://doi.org/10.1016/j.iheduc.2010.03.004

Heller, T., Bélard, S., Sande, O., Kumwenda, T., Gumulira, J., Ganesh, P., Gugsa, S., Tweya, H., & Phiri, S. (2021). Educational content and acceptability of training using mobile instant messaging in large hiv clinics in malawi. *Annals of Global Health, 87*(1), 39-39. https://doi.org/10.5334/AOGH.3208

Henderson, J., & Corry, M. (2021). Teacher anxiety and technology change: A review of the literature. *Technology, Pedagogy and Education, 30*(4), 573-587. doi:10.1080/1475939X.2021.1931426

Hoi, V. N., & Mu, G. M. (2021). Perceived teacher support and students' acceptance of mobile-assisted language learning: Evidence from Vietnamese higher education context. *British Journal of Educational Technology, 52*(2), 879-898. doi:10.1111/bjet.13044

Hong, X., Zhang, M., & Liu, Q. (2021). Prescholl teachers' technology acceptance during the COVID-19: An adapted Technology Acceptance Model. *Frontiers in Psychology, 12*, 1-11. doi:10.3389/fpsyg.2021.691492

Hou, A. C. Y., Shiau, W.-L., & Shang, R.-A. (2019). The involvement paradox: The role of cognitive absorption in mobile instant messaging user satisfaction. *Industrial Management & Data Systems, 119*(4), 881-901. https://doi.org/10.1108/IMDS-06-2018-0245

Howard, S. K. (2013). Risk-aversion: understanding teachers' resistance to technology integration. *Technology, Pedagogy and Education, 22*(3), 357-372. doi:10.1080/1475939X.2013.802995

Hsieh, W. M., & Tsai, C. C. (2017). Taiwanese high school teachers' conceptions of mobile learning. *Computers & Education, 115*, 82-95. doi:10.1016/j.compedu.2017.07.013

Hu, S., Laxman, K., & Lee, K. (2019). Exploring factors affecting academics' adoption of emerging mobile technologies-an extended UTAUT perspective. *Education and Information Technologies*, *25*(5), 4615-4635. https://doi.org/10.1007/s10639-020-10171-x

Huang, L. V., & Zhang, K. (2019). Engagement, formality, and visibility: Managing paradoxes of using mobile instant messaging for work. *International Journal of Communication, 13*, 1919-1938.

Hung, J. L., & Zhang, K. (2012). Examining mobile learning trends 2003–2008: A categorical meta-trend analysis using text mining techniques. *Journal of Computing in Higher Education, 24*, 1-17. https://doi.org/10.1007/s12528-011-9044-9

Hwang, B.-L., Chou, T.-C., & Huang, C.-H. (2021). Actualizing the affordance of mobile technology for mobile learning: A main path analysis of mobile learning. *Educational Technology & Society, 24*(4), 67-80.

Hwang, G., & Tsai, C. (2011). Research trends in mobile and ubiquitous learning: A review of publications in selected journals from 2001 to 2010. *British Journal of Educational Technology, 42*(4), 65-70. doi:10.1111/j.1467-8535.2011.01183.x

Hwang, G. J., Tsai, C. C., & Yang, S. J. H. (2008). Criteria, strategies and research issues of context-aware ubiquitous learning. *Educational Technology & Society, 11*(2), 81–91.

Ibrahim, R. Z. A. R., Zalam, W. Z. M., Foster, B., Afrizal, T., Johansyah, M. D., Saputra, J., Bakar, A. A., Dagang, M. M., & Ali, S. N. M. (2021). Psychosocial work environment and teachers' psychological well-being: The moderating role of job control and social support. International *Journal of Environmental Research and Public Health, 18*(14), 1-19. doi.org/10.3390/ijerph18147308

Ishtaiwa, F. F., Khaled, A., & Dukmak, S. (2015). Faculty members' perceptions of the integration, affordances, and challenges of mobile learning. *International Journal of E-Learning & Distance Education, 30*(2). Retrieved from http://www.ijede.ca/index.php/jde/article/view/937

Ismail, I., Azizan, S. N., & Gunasegaran, T. (2016). Mobile learning in Malaysian universities: Are students ready? *International Journal of Interactive Mobile Technologies, 10*(3), 17-23. doi:10.3991/ijim.v10i3.5316

Ithnin, F., Sahib, S., Eng, C. K., Sidek, S., & Harun, R. N. S. R. (2018). Mapping the futures of Malaysian higher education: A meta-analysis of future studies in the Malaysian higher education scenario. *Journal of Futures Studies, 22*(3), 1-18.

Jaldemark, J., Hrastinski, S., Olofsson, A. D., & Öberg, L.-M. (2017). Editorial introduction: Collaborative learning enhanced by mobile technologies: Editorial. *British Journal of Educational Technology*, 49. https://doi.org/10.1111/bjet.12596

Janschitz, G., & Penker, M. (2022). How digital are 'digital natives' actually? Developing an instrument to measure the degree of digitalisation of university students – the DDS-Index. *Bulletin de Méthodologie Sociologique, 153*(1), 127-159. https://doi.org/10.1177/07591063211061760

Jarvis, S. (2018). Practice-focused constructivist grounded theory methodology in higher education leadership research. In J. Huisman & M. Tight. (Eds.). *Theory and method in higher education research* (pp.189-207). London: Emerald Publishing Limited.

Jia, C., & Hew, K. F. T. (2022). Supporting lower-level processes in EFL listening: the effect on learners' listening proficiency of a dictation program supported by a mobile instant messaging app. *Computer Assisted Language Learning, 35*(1-2), 141-168. doi:10.1080/09588221.2019.1671462

Joo, Y. J., Kim, N., & Kim, N. H. (2016). Factors predicting online university students' use of a mobile learning management system (m-LMS). *Educational Technology Research and Development, 64*, 1–20. doi:10.1007/s11423-016-9436-7

Junco, R. (2012). In-class multitasking and academic performance. *Computers in Human Behavior, 28*, 2236-2243. doi:10.1016/j.chb.2012.06.031

Kaliisa, R., Palmer, E., & Miller, J. (2019). Mobile learning in higher education: A comparative analysis of developed and developing country contexts. *British Journal of Educational Technology, 50*(2), 546-561. https://doi.org/10.1111/bjet.12583

Kamlin, M. B., & Tan, C. K. (2020). Kemampuan ICT "Whats

Karim, Adnan, A. H. M., Salim, M. S. A. M., Kamarudin, S., & Zaidi, A. (2020). Education innovations through mobile learning technologies for the Industry 4.0 readiness of tertiary students in Malaysia. *IOP Conference Series: Materials Science and Engineering, 917*(1), 12022. https://doi.org/10.1088/1757-899X/917/1/012022

Kaufmann, K., Peil, C., & Bork-Hüffer, T. (2021). Producing in situ data from a distance with mobile instant messaging interviews (MIMIs): Examples from the COVID-19 pandemic. *International Journal of Qualitative Methods, 20*, 1-14. doi:10.1177/16094069211029697

Kaushik, V., & Walsh, C. A. (2019). Pragmatism as a research paradigm and its implications for social work research. *Social Sciences, 8*(9), 1-17.

Kaysi, F. (2021). Mobile instant messaging application habits among university students. *Interactive Learning Environments*, 1-19. doi:10.1080/10494820.2021.1922460

Khalid, F., & Abd Samad, M. R. (2021). The use Of mobile learning in teaching and learning session during the Covid-19 pandemic in Malaysia. *Journal of Contemporary Social Science and Educational Studies, 1(2)*, 46-65.

Kiesler, C. A. (1981). Understanding attitudes and predicting social behavior by Icek Ajzen and Martin Fishbein, *American Psychology Association, 26,* 253.

Kim, K., Lee, B., Park, Y., Jung, E. Y., Kim, S. K., Suh, D. H., & Choi, B. R. (2019). Factors encouraging mobile instant messaging service use in medical education. *PeerJ, 7*, 1-12. doi:10.7717/peerj.7275

Krishnamoorthy, R., & Keating, K. (2021). Education crisis, workforce preparedness, and COVID-19: Reflections and recommendations. *The American Journal of Economics and Sociology, 80*(1), 253-274. doi:10.1111/ajes.12376

Kuhn, T. S. (1996). *The structure of scientific revolutions* (3rd ed.). Chicago, IL: University of Chicago Press.

Kukulska-Hulme, A. (2012). How should the higher education workforce adapt to advancements in technology for teaching and learning? *The Internet and Higher Education, 15*(4), 247-254. doi:https://doi.org/10.1016/j.iheduc.2011.12.002

Kukulska-Hulme, A., Sharples, M., Milrad, M., Arnedillo-Sánchez, I., & Vavoula, G. (2009). Innovation in mobile learning: A European perspective. *International Journal of Mobile and Blended Learning, 1*, 13–35.

Kukulska-Hulme, A., & Viberg, O. (2018). Mobile collaborative language learning: State of the art: Mobile collaborative language learning. *British Journal of Educational Technology, 49*(2), 207-218. doi:10.1111/bjet.12580

Kümpel, A. S. (2021). Using messaging apps in audience research: An approach to study everyday information and news use practices. *Digital Journalism*, 1-12. doi:10.1080/21670811.2020.1864219

Kuznekoff, J. H., Munz, S., & Titsworth, S. (2015). Mobile phones in the classroom: Examining the effects of texting, twitter, and message content on student learning. *Communication Education*, *64*(3), 344-365. https://doi.org/10.1080/03634523.2015.1038727

Lai, A. (2016). Mobile immersion: An experiment using mobile instant messenger to support second-language learning. *Interactive Learning Environments, 24*(2), 277-290. doi:10.1080/10494820.2015.1113706

Lai, K.-W., & Smith, L. (2018). Socio-demographic factors relating to perception and use of mobile technologies in tertiary teaching. *British Journal of Educational Technology, 49*(3), 492-504. doi:doi:10.1111/bjet.12544

Lauricella, S., & Kay, R. (2013). Exploring the use of text and instant messaging in higher education classrooms. *Research in Learning Technology, 21*. doi:10.3402/rlt.v21i0.19061

Law, J. K., Thome, P. A., Lindeman, B., Jackson, D. C., & Lidor, A. O. (2018). Student use and perceptions of mobile technology in clinical clerkships – Guidance for curriculum design. *The American Journal of Surgery, 215*(1), 196-199. doi:10.1016/j.amjsurg.2017.01.038

le Roux, D. B., & Parry, D. A. (2022). An exploratory investigation of the use and effects of academic instant messaging groups among university students. *Educational and Information Technologies, 27*(1), 1055-1080. doi:10.1007/s10639-021-10631-y

Leavy, P. (2014). *The Oxford handbook of qualitative research*. New York, NY: Guilford Publications.

Leavy, P. (2017). *Research design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*. New York, NY: Guilford Publications.

Lee, C. Y. (2016). Adoption of WhatsApp instant messaging among students in Ipoh higher education institutions [Master thesis, Wawasan Open University]. Wawasan Open University. http://woulibrary.wou.edu.my/theses-project/MED2016_CYLEE.pdf

Li, D., Chau, P. Y. K., & Lou, H. (2005). Understanding individual adoption of instant messaging: An empirical investigation. *Journal of the Association for Information Systems, 6*(4), 102-129.

Li, X., & Song, S. (2018). Mobile technology affordance and its social implications: A case of “Rain Classroom”. *British Journal of Educational Technology, 49*(2), 276-291. doi:doi:10.1111/bjet.12586

Lin, C.-W., Lin, Y.-S., Liao, C.-C., & Chen, C.-C. (2021). Utilizing Technology Acceptance Model for influences of smartphone addiction on behavioural intention. *Mathematical Problems in Engineering, 2021*, 1-7. https://doi.org/10.1155/2021/5592187

Lim, J., & Richardson, J. C. (2016). Exploring the effects of students’ social networking experience on social presence and perceptions of using SNSs for educational purposes. *The Internet and Higher Education, 29*, 31-39. doi:https://doi.org/10.1016/j.iheduc.2015.12.001

Lincoln, Y. S., & Guba, E. G. (2013). *The Constructivist credo*. Walnut Creek, include state abbreviation: Taylor & Francis Group.

Ma, L., Ding, X., Zhang, X., & Zhang, G. (2020). Mobile users’ self-disclosure behaviour on WeChat: Application of Social Cognitive Theory. *Mobile Information Systems, 2020*, 1-13. doi:10.1155/2020/8903247

Mahmud, R., Ismail, M., Sahid, P., & Yazid, Z. (2007). *ICT integration among school teachers in the district of Hulu Langat, Selangor.* Paper presented at the Proceedings of the 1st International Malaysian Educational Technology Convention.

Malaysian Investment Development Authority (MIDA). (2021, Feb 8). *Evolution of e-Learning in the Malaysian Higher Education Institutions.* https://www.mida.gov.my/mida-news/evolution-of-e-learning-in-the-malaysian-higher-education-institutions/

Malik, A., Dhir, A., Kaur, P., & Johri, A. (2020). Correlates of social media fatigue and academic performance decrement: A large cross-sectional study. *Information Technology & People, 6*(1), 557-580. https://doi.org/10.1108/ITP-06-2019-0289

Manca, S., & Ranieri, M. (2016). “Yes for sharing, no for teaching!”: Social media in academic practices. *The Internet and Higher Education, 29*, 63-74. https://doi.org/10.1016/j.iheduc.2015.12.004

Mao, J. (2014). Social media for learning: A mixed methods study on high school students’ technology affordances and perspectives. *Computers in Human Behavior, 33*, 213-223. doi:10.1016/j.chb.2014.01.002

Maria, M., Shahbodin, F., & Pee, N. C. (2018). Malaysian higher education system towards industry 4.0. - Current Trends Overview. *AIP Conference Proceedings*. doi:10.1063/1.5055483

Mathieson, K. (1991). Predicting user intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior. *Information Systems Research, 2*(3), 173-191.

Matimbwa, R., & Anney, V. N. (2016). Teachers’ and students’ perceptions of self-driven acceptance of mobile phone use as an ICT teaching tool. *Journal of Emerging Trends in Educational Research and Policy Studies, 7*(2), 91-106.

Maxwell, J. A., & Chmiel, M. (2013). Generalization in and from qualitative analysis. In U. Flick (Ed.), *The SAGE Handbook of Qualitative Data Analysis* (pp. 540-553). Thousand Oaks, CA: Sage Publications.

Miles, M. B. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Thousand Oaks, CA: Sage Publications.

Mohammadi, M., Sarvestani, M. S., & Nouroozi, S. (2020). Mobile phone use in education and learning by faculty members of technical-engineering groups: Concurrent mixed methods design. *Frontiers in Education, 5*(16), 1-9. doi:doi.org/10.3389/feduc.2020.00016

Mohd, S. N., Mohd, N. N., & Mohd, J. Z. (2008). *The assessment of ICT integration in teaching and learning of Mathematics in pilot smart schools.* Paper presented at the Proceedings of the 2nd International Malaysian Educational Technology Convention.

Molinillo, S., Aguilar-Illescas, R., Anaya-Sánchez, R., & Vallespín-Arán, M. (2018). Exploring the impacts of interactions, social presence and emotional engagement on active collaborative learning in a social web-

based environment. *Computers & Education, 123*, 41-52. doi:10.1016/j.compedu.2018.04.012

Monica, F.-M., María del Mar, G.-P., & Julio-César, M. (2021). Students' perceptions on social media teaching tools in higher education settings. *Communication & Society, 34*(1), 15-28. doi:10.15581/003.34.1.15-28

Montag, C., Blaszkiewicz, K., Sariyska, R., Lachmann, B., Andone, I., Trendafilov, B., Eibes, M., & Markowetz, A. (2015). Smartphone usage in the 21st century: who is active on WhatsApp? *BMC Research Notes, 8*, 1-6. doi:10.1186/s13104-015-1280-z

Montiel, I., Delgado-Ceballos, J., Ortiz-de-Mandojana, N., & Antolin-Lopez, R. (2020). New ways of teaching: Using technology and mobile apps to educate on societal grand challenges. *Journal of Business Ethics, 161*, 243-251. doi:10.1007/s10551-019-04184-x

Mouakket, S. (2019). The influence of intrinsic and extrinsic gratifications on continuance motivation of mobile instant messaging: The United Arab Emirates context. *Journal of High Technology Management Research, 30*(1), 40-49. doi:10.1016/j.hitech.2019.01.002

Mouakket, S., & Sun, Y. (2019). Examining factors that influence information disclosure on social network sites from the perspective of network externalities. [Information disclosure on SNS]. *Industrial Management & Data Systems, 119*(4), 774-791. doi.org/10.1108/IMDS-02-2018-0060

Neuman, W. L. (2011). *Social research methods : Qualitative and quantitative approaches* (7th ed., International ed.). Include place of publication: Pearson.

Newman, N. (2017,). *Overview and key findings of the 2017 report*. Digital News Report. Include place of publication: publisher.

Nghiem Xuan, D. (2021). Technostress's impact on intention tp apply novel teaching technology. Case study in lecturers at universities in Hanoi. *Journal of Economics and Economic Education Research, 22*, 1-10.

Nguyen, D. (2018). The university in a world of digital technologies: Tensions and challenges. *Australasian Marketing Journal, 26*(2), 79-82. doi:10.1016/j.ausmj.2018.05.012

Nkhoma, C. A., Thomas, S., Nkhoma, M. Z., Sriratanaviriyakul, N., Truong, T. H., & Vo, H. X. (2018). Measuring the impact of out-of-class communication through instant messaging. *Education & Training, 60*(4), 318-334. doi:10.1108/ET-12-2017-0196

O'Bannon, B., & Thomas, K. (2014). Teacher perceptions of using mobile phones in the classroom: Age matters! *Computers & Education, 74*. doi:10.1016/j.compedu.2014.01.006

Ogara, S. O., Koh, C. E., & Prybutok, V. R. (2014). Investigating factors affecting social presence and user satisfaction with mobile instant messaging. *Computers in Human Behavior, 36*, 453-459. doi:10.1016/j.chb.2014.03.064

Oliveira, G., Grenha Teixeira, J., Torres, A., & Morais, C. (2021). An exploratory study on the emergency remote education experience of higher education students and teachers during the COVID-19 pandemic. *British Journal of Educational Technology, 52*(4), 1357-1376. doi:10.1111/bjet.13112

Onyema, E., Eucharia, A., S, F., Akindutire, O., Daniel, O., & Kingsley, N. (2021). Pedagogical use of mobile technologies during Coronavirus school closure. *Journal of Computer Science and Its Application, 27,* 97-110. doi:10.4314/jcsia.v27i2.9

Öztok, M., & Kehrwald, B. A. (2017). Social presence reconsidered: Moving beyond, going back, or killing social presence. *Distance Education, 38*(2), 259–266. https://doi.org/10.1080/01587919.2017.1322456

Öztok, M., Zingaro, D., Makos, A., Brett, C., & Hewitt, J. (2015). Capitalizing on social presence: The relationship between social capital and social presence. *The Internet and Higher Education, 26*, 19-24. doi:10.1016/j.iheduc.2015.04.002

Panisoara, I., Lazar, I., Panisoara, G., Chirca, R., & Ursu, A. (2020). Motivation and continuance intention towards online instruction among teachers during the COVID-19 pandemic: The mediating effect of burnout and technostress. *International Journal of Environmental Research and Public Health, 17*, 1-29. https://doi.org/10.3390/ijerph17218002

Parsonage, J., Naylor Lund, K., Dawes, H., Almoajil, H., & Eklund, M. (2020). An exploration of occupational choices in adolescence: A constructivist grounded theory study. *Scandinavian Journal of Occupational Therapy*, 29(6), 1-18. doi:10.1080/11038128.2020.1839965

Passey, D. (2010). Mobile Learning in School Contexts: Can Teachers Alone Make It Happen? *IEEE Transactions on Learning Technologies, 3*(1), 68-81. doi:10.1109/tlt.2009.47

Patterson, M. C. (2017). A naturalistic investigation of media multitasking while studying and the effects on exam performance. *Teaching of Psychology, 44*, 51-57. doi:10.1177/0098628316677913

Patton, M. Q. (1990). *Qualitative evaluation and research methods*. Beverly Hills, CA: Sage.

Patton, M. Q. (2002). *Qualitative Research and Evaluation Methods* (3rd ed.). Thousand Oaks, CA: Sage.

Pearson, M., & Somekh, B. (2006). Learning transformation with technology: A question of sociocultural contexts? *International Journal of Qualitative Studies in Education, 19,* 519-539.

Pedro, L. F. M. G., Barbosa, C. M. M. D. O., & Santos, C. M. d. N. (2018). A critical review of mobile learning integration in formal educational contexts. *International Journal of Educational Technology in Higher Education, 15*(1), 10. doi:10.1186/s41239-018-0091-4

Peponis, C., Khaliq, M., Ismail Ali, A., Bose, D., Wicks, L., & Tessema, G. (2020). An international instant-messaging journal club: A modern, fun and global approach to a traditional teaching tool. *Tropical Doctor, 50*(1), 49-53. doi:10.1177/0049475519876856

Phan, A.-K., & Sethu, S. (2021). Work-related mobile instant messaging use after work hours during Covid-19 pandemic. *SHS Web of Conferences, 124*, 1-12. doi:10.1051/shsconf/202112404006

Pilarska, J. (2021). The constructivist paradigm and phenomenological qualitative research design. In A. Pabel, J. Pryce, & A. Anderson (Ed.). *Research Paradigm Considerations for Emerging Scholars* (pp. 64(1st ed. ed.). Bristol: Channel View Publications. *doi.org/10.21832/PABEL8274*

Pimmer, C., Bruhlmann, F., Odetola, T. D., Dipeolu, O., Grohbiel, U., & Ajuwon, A. J. (2018). Instant messaging and nursing students' clinical learning experience. *Nurse Education Today, 64*, 119-124. doi:10.1016/j.nedt.2018.01.034

Pimmer, C., Brühlmann, F., Odetola, T. D., Oluwasola, D. O., Dipeolu, O., & Ajuwon, A. J. (2019). Facilitating professional mobile learning communities with instant messaging. *Computers & Education, 128*, 102-112. doi:10.1016/j.compedu.2018.09.005

Pimmer, C., Brühlmann, F., Odetola, T. D., Dipeolu, O., Oluwasola, O., Jäger, J., & Ajuwon, A. J. (2021). WhatsApp for mobile learning. Effects on

knowledge, resilience and isolation in the school-to-work transition. *The Internet and Higher Education, 50*, 100809. doi:10.1016/j.iheduc.2021.100809

Pimmer, C., Lee, A., & Mwaikambo, L. (2018). Mobile instant messaging: New knowledge tools in global health? *Knowledge Management & E-learning, 10*(3), 334-349. https://doi.org/10.34105/j.kmel.2018.10.019

Pimmer, C., Mateescu, M., & Gröhbiel, U. (2016). Mobile and ubiquitous learning in higher education settings. A systematic review of empirical studies. *Computers in Human Behavior, 63*, 490-501. doi:10.1016/j.chb.2016.05.057

Pimmer, C., & Rambe, P. (2018). The inherent tensions of "Instant Education": A critical review of mobile instant messaging. *International Review of Research in Open and Distributed Learning, 19*(5), 218-237. doi:https://doi.org/10.19173/irrodl.v19i5.3765

Pooley, A. W., Midgley, W., & Farley, H. (2019). Informal language learning through mobile instant messaging among university students in Korea. *International Journal of Mobile and Blended Learning, 11* (2), 33-49.

Qashou, A. (2020). Influencing factors in M-learning adoption in higher education. *Education and Information Technologies, 26*(2), 1755-1785. https://doi.org/10.1007/s10639-020-10323-z

Rahim, M. E. A., & Rahim, E. M. A. (2021). Redefining digi*tal divide in Malaysian Higher Education: The case of COVID-19.* Paper presented at the e-Proceedings of International Conference on Language, Education, Humanities, & Social Sciences.

Rahmani, F., & Leifels, K. (2018). Abductive Grounded Theory: A worked example of a study in construction management. *Construction Management and Economics, 36*(10), 565-583. https://doi.org/10.1080/01446193.2018.1449954

Raman, A., Sani, R. M., & Kaur, P. (2014). *Facebook as a collaborative and communication tool: A study of secondary school students in Malaysia. Procedia - Social and Behavioral Sciences, 155,* 141-146.

Rambe, P., & Bere, A. (2013). Using mobile instant messaging to leverage learner participation and transform pedagogy at a South African University of Technology. *British Journal of Education Technology, 44*(4), 544-561. doi:10.1111/bjet.12057

Rambe, P., & Mkono, M. (2019). Appropriating WhatsApp-mediated postgraduate supervision to negotiate 'relational authenticity' in resource-constrained environments. *British Journal of Educational Technology, 50*(2), 702-734. doi:10.1111/bjet.12688

Ramsay, P. D. K. (1991). Change and effectiveness in schools: A cultural perspective. *Curriculum Inquiry, 21*(1), 127-131.

Reinicke, B. A., & Marakas, G. M. (2005). Exploring the psychological determinants of Perceived Ease of Use and Usefulness. *Proceedings of the 38th Annual Hawaii International Conference on System Sciences*, 2005, pp. 149b-149b, doi: 10.1109/HICSS.2005.264.

Reyes, A. T., Kearney, C. A., Isla, K., & Bryant, R. (2018). Student veterans' construction and enactment of resilience: A constructivist grounded theory study. *Journal of Psychiatry and Mental Health Nursing, 25*(1), 37-48. doi:10.1111/jpm.12437

Richardson, J. C., Maeda, Y., Lv, J., & Caskurlu, S. (2017). Social presence in relation to students' satisfaction and learning in the online environment: A meta-analysis*. Computers in Human Behavior, 71*, 402-417. https://doi.org/10.1016/j.chb.2017.02.001

Rienties, B., Brouwer, N., & Lygo-Baker, S. (2013). The effects of online professional development on higher education teachers' beliefs and intentions towards learning facilitation and technology. *Teaching and Teacher Education, 29*, 122-131. doi.org/10.1016/j.tate.2012.09.002

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative Research in Psychology, 11*(1), 25-41. doi:10.1080/14780887.2013.801543

Rohwer, E., Flöther, J.-C., Harth, V., & Mache, S. (2022). Overcoming the "Dark Side" of technology: A scoping review on preventing and coping with work-related technostress. *International Journal Environmental Research and Public Health, 19*(6), 3625. https://doi.org/10.3390/ijerph19063625

Rosenberg, H., & Asterhan, C. S. C. (2018). "WhatsApp, teacher?" - Student perspectives on teacher-student WhatsApp interactions in secondary schools. *Journal of Information Technology Education: Research, 17*, 205-226. doi:doi.org/10.28945/4081

Roslan, N. A. N., Mohd Ayub, A. F., & Ghazali, N. (2020). Predictor of instant messaging use among students for academic purpose. *International Journal of Interactive Mobile Technologies, 14*(15), 195-207. doi:10.3991/ijim.v14i15.15155

Rossman, G. B., Corbett, H. D., & Dawson, J. A. (1984). Intentions and impacts: A comparison of sources of influence on local school systems. *Include journal title, 21*(1), 86-106.

Rossman, G. B., Corbett, H. D., & Firestone, W. A. (1988). *Change and effectiveness in schools : A cultural perspective*. Albany, include state abbreviation: Suny Press.

Rowan-Kenyon, H., & Martinez Aleman, A. (2016). Social media in higher education. *ASHE Higher Education Report, 42*(1), 1-144.

Rubin, H. J. (2012). *Qualitative interviewing : The art of hearing data* (3rd ed. ed.). Thousand Oaks, CA: Sage.

Salam, M. A. u., Oyekwe, G. C., Ghani, S. A., & Choudhury, R. I. (2021). How can WhatsApp® facilitate the future of medical education and clinical practice? *BMC Medical Education, 21*(1), 54-54. doi:10.1186/s12909-020-02440-7

Salanova, M., Llorens, S., & Cifre, E. (2013). The dark side of technologies: Technostress among users of information and communication technologies. *International Journal of Psychology, 48*(3), 422-436. https://doi.org/10.1080/00207594.2012.680460

Saldana, J. (2011). *Fundamentals of qualitative research [electronic resource].* Oxford: Oxford University Press.

Saldana, J. (2013). *The coding manual for qualitative researchers* (2nd ed.). Thousand Oaks, CA: Sage.

Saldana, J. (2014). Coding and analysis strategies. In P. Leavy (Ed.), *The Oxford Handbook of Qualitative Research* (pp. 581-605). New York, NY: Oxford University Press.

Sana, F., Weston, T., & Cepeda, N. J. (2013). Laptop multitasking hinders classroom learning for both users and nearby peers. *Computers & Education, 62*, 24-31. doi:10.1016/j.compedu.2012.10.003

Sánchez-Prieto, J. C., Huang, F., Olmos-Migueláñez, S., García-Peñalvo, F. J., & Teo, T. (2019). Exploring the unknown : The effect of resistance to change and attachment on mobile adoption among secondary pre-service teachers. *British Journal of Educational Technology, 50*(5), 2433-2449. doi:10.1111/bjet.12822

Santos, I. M., Bocheco, O., & Habak, C. (2017). A survey of student and instructor perceptions of personal mobile technology usage and policies

for the classroom. *Education and Information Technologies, 23*(2), 617-632. doi:10.1007/s10639-017-9625-y

Saritepeci, M., Duran, A., & Ermiş, U. F. (2019). A new trend in preparing for foreign language exam (YDS) in Turkey: Case of WhatsApp in mobile learning. *Education and Information Technologies, 24*(5), 2677-2699. https://doi.org/10.1007/s10639-019-09893-4

Sbaraini, A., Carter, S. M., Evans, R. W., & Blinkhorn, A. (2011). How to do a grounded theory study: A worked example of a study of dental practices. *BMC Medical Research Methodology, 11*(1), 128. doi:10.1186/1471-2288-11-128

Schmulian, A., & Coetzee, S. A. (2018). The development of messenger bots for teaching and learning and accounting students' experience of the use thereof. *British Journal of Educational Technology, 50*(5), 2751-2777. https://doi.org/doi.org/10.1111/bjet.12723

Schutten, D., Stokes, K. A., & Arnell, K. M. (2017). I want to media multitask and I want to do it now: Individual differences in media multitasking predict delay of gratification and system-1 thinking. *Cognitive research: principles and implications, 2*, 1-10.

Seifert, T. (2015). Pedagogical applications of smartphone integration in teaching. *International Journal of Mobile and Blended Learning, 7*(2), 1-16. doi:10.4018/ijmbl.2015040101

Selamat, A., Alias, R. A., Hikmi, S. N., Puteh, M., & Tapsir, S. H. (2017). *Higher Education 4.0 Current Status and Readiness in Meeting the Fourth Industrial Revolution Challenges.* Paper presented at the MyHEF Forum, Kuala Lumpur, Malaysia.

Shahroom, A. A., & Hussin, N. (2018). Industrial revolution 4.0 and education. *International Journal of Academic Research in Business and Social Sciences, 8*(9), 314-319. doi:10.6007/IJARBSS/v8-i9/4593

Shin, J. C., & Jung, J. (2014). Academics job satisfaction and job stress across countries in the changing academic environments. *Higher Education, 67*(5), 603-620. https://doi.org/10.1007/s10734-013-9668-y

Sidik, D., & Syafar, F. (2020). Exploring the factors influencing student's intention to use mobile learning in Indonesia higher education. *Education and Information Technologies, 25*(6), 4781-4796. https://doi.org/10.1007/s10639-019-10018-0

Smith, M. R. (2015). *Harpers ferry armory and the new technology: The challenge of change.* Include place of publication, state abbreviation: Cornell University Press.

So, S. (2016). Mobile instant messaging support for teaching and learning in higher education. *The Internet and Higher Education, 31*, 32-42. doi:10.1016/j.iheduc.2016.06.001

Sobaih, A. E. E., Moustafa, M. A., Ghandforoush, P., & Khan, M. (2016). To use or not to use? Social media in higher education in developing countries. *Computers in Human Behavior, 58*, 296-305. doi:https://doi.org/10.1016/j.chb.2016.01.002

Soo, K. Y. (2018). Are educators ready for Education 4.0? *The Star Online*. Retrieved from https://www.thestar.com.my/opinion/letters/2018/04/06/are-educators-ready-for-education-40/

Statista. (2022). Share of internet users using communication applications in Malaysia as of May 2020, by app. Retrieved from https://www.statista.com/statistics/973428/malaysia-internet-users-using-communication-apps/

Starks, H., & Brown Trinidad, S. (2007). Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative Health Research, 17*(10), 1372-1380. doi:10.1177/1049732307307031

Stickney, L. T., Bento, R. F., Aggarwal, A., & Adlakha, V. (2019). Online higher education: Faculty satisfaction and its antecedents. *Journal of Management Education, 43*(5), 509-542. doi:10.1177/1052562919845022

Subrahmanyam, K., Michikyan, M., Clemmons, C., Carrillo, R., Uhls, Y. T., & Greenfield, P. M. (2013). Learning from paper, learning from screens: Impact of screen reading and multitasking conditions on reading and writing among college students. *International Journal of Cyber Behavior, Psychology and Learning, 3*, 1-27. doi:10.4018/ijcbpl.2013100101

Sun, Z., Lin, C. H., Wu, M., Zhou, J., & Luo, L. (2018). A tale of two communication tools: Discussion-forum and mobile instant-messaging apps in collaborative learning. *British Journal of Educational Technology, 49*(2), 248-261. doi:10.1111/bjet.12571

Sung, Y., Chang, K., & Liu, T. (2016). The effects of integrating mobile devices with teaching and learning on students' learning performance: A meta-

analysis and research synthesis. *Computers & Education, 94*, 252-275. https://doi.org/10.1016/j.compedu.2015.11.008

Tamrat, W. (2021). Enduring the impacts of COVID-19: experiences of the private higher education sector in Ethiopia. *Studies in Higher Education, 46*(1), 59-74. doi:10.1080/03075079.2020.1859690

Tang, C. M., & Bradshaw, A. (2020). Instant messaging or face-to-face? How choice of communication medium affects team collaboration environments. *E-learning and Digital Media, 17*(2), 111-130. doi:10.1177/2042753019899724

Tang, Y., & Hew, K. F. (2017a). Examining student participation and perception of mobile instant messaging: An exploratory study. *International Journal of Learning and Teaching, 3(*4*),* 364-271. doi:10.18178/ijlt.3.4.264-271

Tang, Y., & Hew, K. F. (2017b). Is mobile instant messaging (MIM) useful in education? Examining its technological, pedagogical, and social affordances. *Educational Research Review, 21*, 85-104. doi:10.1016/j.edurev.2017.05.001

Tang, Y., & Hew, K. F. (2019). Examining the utility and usability of mobile instant messaging in a graduate-level course: A usefulness theoretical perspective. *Australasian Journal of Educational Technology, 35*(4). doi:10.14742/ajet.4571

Tang, Y., & Hew, K. F. (2020). Does mobile instant messaging facilitate social presence in online communication? A two-stage study of higher education students. *International Journal of Educational Technology in Higher Education, 17*(1), 1-17. doi:10.1186/s41239-020-00188-0

Tang, Y., & Hew, K. F. (2022). Effects of using mobile instant messaging on student behavioral, emotional, and cognitive engagement: a quasi-experimental study. *International Journal of Educational Technologies in Higher Education, 19*(1), 3-3. doi:10.1186/s41239-021-00306-6

Tarafdar, M., Tu, Q., Ragu-Nathan, B. S., & Ragu-Nathan, T. S. (2007). The Impact of technostress on role stress and productivity. *Journal of Management Information Systems Research, 24*(1), 301-328. doi:10.2753/MIS0742-1222240109

Tasir, Z., & Lim, B. (2011). Level of knowledge, attitude and problems of computer usage among teachers in secondary schools in Alor Gajah. *Journal of Social Science, 3*, 83-103.

Tavory, I., & Timmermans, S. (2018). Abductive analysis and grounded theory. In A. Bryant & K. Charmaz (Ed.).*The SAGE Handbook of Current Developments in Grounded Theory* (pp. 532–546). London: Sage.

Teow, P. L., & Zainab, A. N. (2003). Access to online databases at private colleges and universities in Malaysia. *Malaysian Journal of Library and Information Science, 8*(1), 91-101.

Thomas, K. M., O'Bannon, B. W., & Bolton, N. (2013). Cell phones in the classroom: Teachers' perspectives of inclusion, benefits, and barriers. *Computers in the Schools*, *30*(4), 295-308. https://doi.org/10.1080/07380569.2013.844637

Thornberg, R., & Charmaz, K. (2013). Grounded theory and theoretical coding. In Flick (Ed.), *The SAGE Handbook of Qualitative Data Analysis* (pp. 153-169). London: Sage.

Tichy, N. M. (1982). Managing Change Strategically: The Technical, Political, and Cultural Keys. *Organizational Dynamics, 11*(2), 59-80.

Todoranova, L., Nacheva, R., Sulov, V., & Penchev, B. (2020). A model for mobile learning integration in higher education based on students' expectations. *International Journal of Interactive Mobile Technologies, 14*(11), 171-182. doi:10.3991/ijim.v14i11.13711

Tossell, C. C., Kortum, P., Shepard, C., Rahmati, A., & Zhong, L. (2015). You can lead a horse to water but you cannot make him learn: Smartphone use in higher education. *British Journal of Educational Technology, 46*(4), 713-724. doi:doi:10.1111/bjet.12176

Tseng, F.-C., Cheng, T. C. E., Yu, P.-L., Huang, T.-L., & Teng, C.-I. (2019). Media richness, social presence and loyalty to mobile instant messaging. *Industrial Management & Data Systems, 119*(6), 1357-1373. doi:10.1108/IMDS-09-2018-0415

Tyrer, C. (2019). Beyond social chit chat? Analysing the social practice of a mobile messaging service on a higher education teacher development course. *International Journal of Educational Technology in Higher Education, 16*(1), 1-20. doi:10.1186/s41239-019-0143-4

Urien, B., Erro-Garcés, A., & Osca, A. (2019). WhatsApp usefulness as a communication tool in an educational context. *Education and Information Technologies, 24*(4), 2585-2602. doi:10.1007/s10639-019-09876-5

van Rensburg, J. C., Coetzee, S. A., & Schmulian, A. (2022). Talking during a test?! Embracing mobile instant messaging during assessment.

Assessment & Evaluation in Higher Education, 1-13. https://doi.org/10.1080/02602938.2022.2041545

Vázquez-Cano, E. (2014). Mobile distance learning with Smartphones and apps in higher education. *Educational Sciences: Theory & Practice, 14*, 1505-1520.

Veletsianos, G., & Kimmons, R. (2013). Scholars and faculty members' lived experiences in online social networks. *The Internet and Higher Education, 16*, 43-50. doi:https://doi.org/10.1016/j.iheduc.2012.01.004

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of information technology: Toward a unified view. *MIS Quarterly, 27*(3), 425-478. doi:10.2307/30036540

Viswanath, V. (2000). Determinants of Perceived Ease of Use: Integrating control, intrinsic motivation, and emotion into the Technology Acceptance Model. *Information Systems Research, 11*(4), 342-365. doi:10.1287/isre.11.4.342.11872

Wang, Y. P., Fang, W. C., Han, J., & Chen, N. S. (2016). Exploring the affordances of WeChat for facilitating teaching, social and cognitive presence in semi-synchronous language exchange. *Australasian Journal of Educational Technology, 32*(4), 18-37.

Wang, C., Zhang, J., & Lee, M. K. O. (2021). Time flies when chatting online: a social structure and social learning model to understand excessive use of mobile instant messaging. *Information Technology & People*. https://doi.org/10.1108/ITP-09-2020-0624

Wasserman, E., & Zwebner, Y. (2017). Communication between teachers and parents using the WhatsApp application. *International Journal of Learning, Teaching and Educational Research, 16*(12), 1-12. doi:10.26803/ijlter.16.12.1

Watson, C., Wilson, A., Drew, V., & Thompson, T. L. (2016). Criticality and the exercise of politeness in online spaces for professional learning. *The Internet and Higher Education, 31*, 43-51. https://doi.org/10.1016/j.iheduc.2016.06.002

Weidlich, J., & Bastiaens, T. J. (2017). Explaining social presence and the quality of online learning with the SIPS model. *Computers in Human Behavior, 72*, 479-487. https://doi.org/10.1016/j.chb.2017.03.016

Wentworth, D. K., & Middleton, J. H. (2014). Technology use and academic performance. *Computers & Education, 78*, 306-311. doi:10.1016/j.compedu.2014.06.012

Wu, W., Wu, Y., Chen, C., Kao, H., Lin, C., & Huang, S. (2012). Review of trends from mobile learning studies: A meta-analysis. *Computers & Education, 59*, 817-927. https://doi.org/10.1016/j.compedu.2012.03.016

Xu, Y. (2022). A dynamic network perspective on the evolution of the use of multiple mobile instant messaging apps. *Communication monographs*, 1-21. https://doi.org/10.1080/03637751.2022.2040739

Xue, S., & Churchill, D. (2022). Educational affordances of mobile social media for language teaching and learning: A Chinese teacher's perspective. *Computer Assisted Language Learning, 35*(4), 918-947. https://doi.org/10.1080/09588221.2020.1765811

Yasuda, R. (2021). Online knowledge construction mediated by mobile instant messaging. *Knowledge Management & e-learning, 13*(1), 21-38. doi:10.34105/j.kmel.2021.13.002

Yuan, C.-H., & Wu, Y. J. (2020). Mobile instant messaging or face-to-face? Group interactions in cooperative simulations. *Computers in Human Behavior, 113*, 1-9. 106508. doi:10.1016/j.chb.2020.106508

Yun, H., Kettinger, W. J., & Lee, C. C. (2012). A new open door: The smartphone's impact on work-to-life conflict, stress, and resistance. *International Journal of Electronic Commerce, 16*(4), 121-152. doi:10.2753/JEC1086-4415160405

Zapata-Barrero, R., & Yalaz, E. (2018). *Qualitative Research in European Migration Studies*. IMISCOE Research Series

Zhang, X., Lo, P., So, S., Chiu, D. K. W., Leung, T. N., Ho, K. K. W., & Stark, A. (2021). Medical students' attitudes and perceptions towards the effectiveness of mobile learning: A comparative information-need perspective. *Journal of Librarianship and Information Science, 53*(1), 116-129. https://doi.org/10.1177/0961000620925547

Zhu, M., & Zhang, Y. (2021). Medical and public health instructors' perceptions of online teaching: A qualitative study using the Technology Acceptance Model 2. *Education and Information Technologies, 27*(2), 2385-2405. doi:10.1007/s10639-021-10681-2

Appendices

Appendix 1: Ethics Approval

8th April 2019

Dear Serena Leow,
Thank you for submitting your ethics application and additional information for 'The Use of MIM applications Beyond the Classroom in Malaysia: Instructors' Perspectives on Adaptation to Change'. The information you provided has been reviewed by Professor Don Passey and I can confirm that approval has been granted for this project. As principal investigator your responsibilities include:

- ensuring that (where applicable) all the necessary legal and regulatory requirements in order to conduct the research are met, and the necessary licenses and approvals have been obtained;
- reporting any ethics-related issues that occur during the course of the research or arising from the research (e.g. unforeseen ethical issues, complaints about the conduct of the research, adverse reactions such as extreme distress) to the Research Ethics Officer (Dr Murat Öztok or Dr Natasa Lackovic).
- submitting details of proposed substantive amendments to the protocol to Prof. Don Passey (spvr) for approval.

Please do not hesitate to contact your supervisor if you require further information about this.

Kind regards,

Alison Sedgwick
Programme Administrator
Doctoral Programme in Educational Research

Head of Department
Professor Paul Ashwin, BA, MSc, PhD
Professors
Carolyn Jackson, BSc, PhD
Don Passey, BSc, MA, PhD
Murray Saunders, BA, MA, PhD
Malcolm Tight, BSc, PhD
Paul Trowler, BA, MA, Cert Ed., PhD

Educational Research
County South
Lancaster University
Bailrigg Campus
Lancaster
LA1 4YD
United Kingdom

TEL: (+44) (0)1524 593572

http://www.lancaster.ac.uk/fass/edres/

Appendix 2: Informed Consent Form

CONSENT FORM

Project Title: Adopting and Adapting to Technological Changes in Higher Education

Name of Researchers: Serena Leow Wai Yee
Email: leows1@lancaster.ac.uk

Please tick each box

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time during my participation in this study and within 2 weeks after I took part in the study, without giving any reason. If I withdraw within 2 weeks of taking part in the study my data will be removed. If I am involved in focus groups and then withdraw my data will remain part of the study. PLEASE NOTE: Withdrawing from a focus group can be difficult and if your study involves focus groups you may want to add the following: I understand that as part the focus group I will take part in, my data is part of the ongoing conversation and cannot be destroyed. I understand that the researcher will try to disregard my views when analysing the focus group data, but I am aware that this will not always be possible.	☐
3. If I am participating in the focus group I understand that any information disclosed within the focus group remains confidential to the group, and I will not discuss the focus group with or in front of anyone who was not involved unless I have the relevant person's express permission	☐
4. I understand that any information given by me may be used in future reports, academic articles, publications or presentations by the researcher/s, but my personal information will not be included and I will not be identifiable.	☐
5. I understand that my name/my organisation's name will not appear in any reports, articles or presentation without my consent.	☐
6. I understand that any interviews or focus groups will be audio-recorded and transcribed and that data will be protected on encrypted devices and kept secure.	☐

7. I understand that data will be kept according to University guidelines for a minimum of 10 years after the end of the study.	☐
8. I agree to take part in the above study.	☐

_____ _____ _____

Name of Participant Date Signature

I confirm that the participant was given an opportunity to ask questions about the study, and all the questions asked by the participant have been answered correctly and to the best of my ability. I confirm that the individual has not been coerced into giving consent, and the consent has been given freely and voluntarily.

Signature of Researcher /person taking the consent_____ Date _____ Day/month/year

One copy of this form will be given to the participant and the original kept in the files of the researcher at Lancaster University

Appendix 3: Email invitation to participants

Email – Invitation to Participate

Dear sir/ madam,

I am a PhD student at Lancaster University and I would like to invite you to take part in a research study about adopting and adapting to technological changes in higher education. The title of my study is 'Adopting and Adapting to Technological Changes in Higher Education.'

You have been invited to participate in this study because of your status as an instructor at a higher education institution in Malaysia. Your participation in this study will provide further insights on the advantages or challenges that instructors face in trying to adopt mobile technologies in teaching within Malaysian higher education institution. This understanding will provide policymakers from various stakeholder groups (e.g. higher education institutions, Ministry of Education, etc) a clear perspective on what to improve in order to empower instructors in adapting to the changing technological environment in higher education settings.

Should you be interested to participate in this study, I will be more than happy to set an appointment to conduct an interview session with you. I can be reached at leows1@lancaster.ac.uk.

I look forward to receiving your favourable response. Thank you for your time and consideration.

Best regards,
Serena Leow
PhD Student
Lancaster University, UK

Appendix 4: Initial coding of 80 codes

Codes		
Abusing	Created a gap between instructor-student	Expectation from students
Balancing relationship with students	Demotivated - Instructors	Expectations on students to change
Being current and up-to-date	Discretion - from students to share number	Face-to-face students
Bombarded	Distractions from work	Fine with spreading personal number
Bonds with students	Eases communication	Getting attention
Boundaries	Easily reachable	Giving out phone number freely

Codes		
Can do without	Effectiveness	Guilt for not checking messages
Clarification	Emojis	Habit - Instructors
Compromise	Etiquettes, Formalities and politeness	Hopeless situation
Coping mechanisms and growing accustomed	Evidence	Ignore but never block
Immediacy - access to students and vice versa	Mentally depressed students	Prioritising messages
Institutional culture	Minimise WhatsApp for teaching	Professional use for work

Codes		
Institution's expectations on instructors	Misinterpretation	Public vs private universities
Instructor's background	Mobility of learning	Questions - Valid or invalid
Instructor's expectations - institutional support	Monetary compensation	Reflecting on e-learning
Instructor's preference	Monitoring students' progress	Reputation of instructor
Instructor's usage is the same as students'	Not bombarded	Resistance
Intrusive	Ownership to communicate on students	Role of a counselor

Codes		
Irrelevant messages from work WhatsApp	Personal and privacy concerns	Scheduling
Learning Activities - Adoption	Power as superior	Self-motivation for adoption
Liberty vs. Control of Owning Mobile phones	Pressure from work WhatsApp	Sense of dedication and responsibility
Limiting communication with students	Preview of what is to come	Setting rules for use
Shy students	Wishes and appreciation messages	Students avoiding instructors
Special cases - exceptions	Technical or security issues	Student's culture

Codes		
Time to think in constructing messages for students	Understanding students' dilemma	Use due to nature of the subject
Tool of communication	Urgency	Variety causes confusion
Trick instructors to answer messages	Unaware of institutional policies	

Appendix 5: Second Initial Coding of 83 codes

Codes		
Abusing	Limiting communication	Evidence
Anonymity	Setting rules of use	Expectation from students
Benefits	Coping mechanisms and growing accustomed	Expecting students to change
Blocking	Demotivated - Instructors	Forget
Unknown numbers	Disruption	Gap between instructor-student
Bombarded	Distractions from work	Getting attention

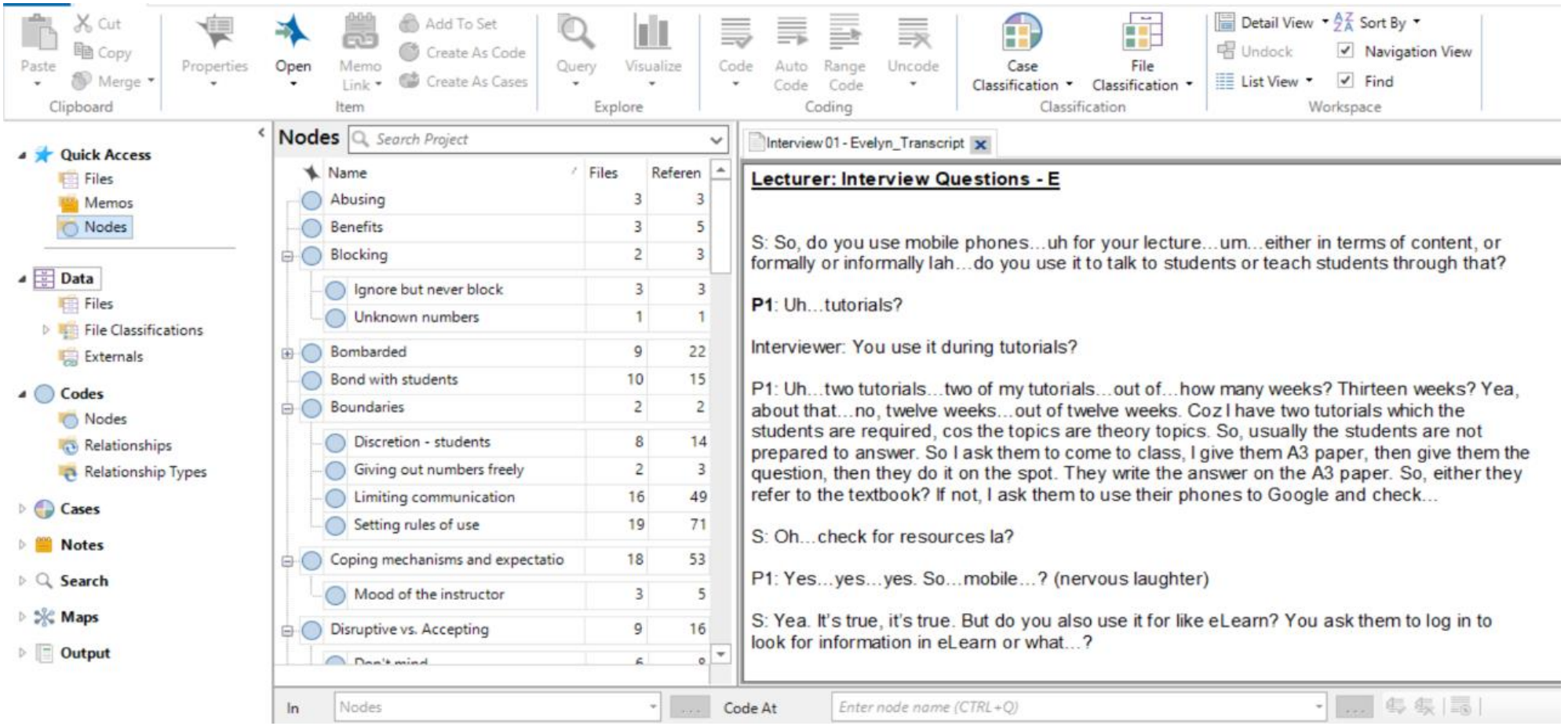
Codes		
Lack control	Don't mind	Gossip group
Bond with students	Easily reachable	Guilt for not checking messages
Boundaries	Emojis	Ignore but never block
Discretion - students	Enjoy	Immediacy - access to students and vice versa
Giving out numbers freely	Etiquettes, Formalities and politeness	Institutional culture
Institution's expectations on instructors	Research information	Public vs private universities
Instructor's background	Misinterpretation	Reflecting on e-learning

Codes		
Habits	Monitoring students' progress	Reputation of instructor
Instructor's expectations - institutional support	Mood of the instructor	Resistance
Unaware of policies	Mutual understanding - boss and instructor	Role of a counselor
Instructor's usage is the same as students'	Ownership to communicate on students	Depressed students
Interpersonal and intonation	Personal and privacy concerns	Self-motivation for adoption
Intrusive	Personal choice - instructor	Sense of dedication and responsibility

Codes		
Last minute	Personal vs. Work Mobile Phones	Understanding students' dilemma
Spontaneous	Power as superior	Student's culture
Learning Activities - Adoption	Special cases	Maturity
Clarification	Professional use for work	Ungrateful
Mobility	Pressure from work WhatsApp	Students not listening
Nature of the subject	Technical or security issues	Tool of communication
Tailoring and prioritising messages	Variety of mobile platforms	Social networking sites
Trick instructors to answer messages	Valid vs invalid questions	Urgency

Codes		
Wishes and appreciation messages	Work-life distinction	

Appendix 6: Example of Manual Coding via NVivo



Appendix 7: Example of Memos from Focused Coding

Participants seem to fall into 3 categories, unwilling, unwilling but still use, and willing. What causes them to use? Those who fall into the unwilling but use, I wonder if they were pressured by someone or forced to conform to use MIM applications?

P1

- Unwilling
- Do not give students contact number
- Only uses official online learning platforms (i.e. BlackBoard)
- Direct students to use official platforms for communication
- Personal is personal, work is work.
- Set boundaries in type of communication platform with students.

P2

- Unwilling but use
- Use WhatsApp because there is no choice, this generation uses it.
- Self-motivation is the key
- Set personal **boundaries** by limiting communication with students.

P3

- Unwilling but use
- Use because students are using
- Feels stressed trying to cope
- Set **boundaries** personally and for students, rules for usage
- Played the role of a counsellor through WhatsApp

P4

- Unwilling but use
- Use because students need a different space/ platform for communication
- Thinks of giving number out to students is SOS, will not benefit them.
- Set boundaries for students, rules for usage
- Played the role of a counsellor through WhatsApp

P5

- Willing
- Set boundaries for students, rules for usage
- Use WhatsApp with students because of the nature of the subjects taught
- Don't feel obligated to reply after office hours because it's a personal phone, not company's phone. (Makes a conscious effort to set boundaries personally after office hours)
- Emphasising etiquettes for students' MIM usage with him
- Reflecting on the appropriateness of adapting to the usage of MIM applications beyond working hours
- Thinks students "study" lecturers, do not entertain unnecessary questions.