2020

Emergency management in higher education during COVID-19 pandemic: A phenomenology inquiry comparing a developed and developing country

Saira Hanif Soroya
Department of Information Management, University of the Punjab, Lahore.Pakistan., saira.im@pu.edu.pk

Mohsin Abdur Rehman
Institute of Management Greater Manchester, University of Bolton, UK, mohsin_abdul@live.com

Zuhair Abbas
Faculty of Management and Economics, Tomas Bata University, Zlin, Czech Republic, abbas@utb.cz

Farhan Mirza
University of Management and Technology, Sialkot Campus, Pakistan, mirzafarhan617@gmail.com

Khalid Mahmood
Department of Information Management, University of the Punjab Lahore, Pakistan, khalid.im@pu.edu.pk

See next page for additional authors

Authors

Saira Hanif Soroya, Mohsin Abdur Rehman, Zuhair Abbas, Farhan Mirza, Khalid Mahmood, and Muhammad Aboidullah

Emergency management in higher education during COVID-19 pandemic: A phenomenology inquiry comparing a developed and developing country

Saira Hanif Soroya
Department of Information Management, University of the Punjab Lahore, Pakistan,
Email: saira.im@pu.edu.pk

Mohsin Abdur Rehman
Institute of Management Greater Manchester, University of Bolton, UK
Email: mohsin_abdul@live.com

Zuhair Abbas
Faculty of Management and Economics, Tomas Bata University, Zlin, Czech Republic
Email: abbas@utb.cz

Farhan Mirza
University of Management and Technology, Sialkot Campus, Pakistan
Email: mirzafarhan617@gmail.com

Khalid Mahmood
Department of Information Management, University of the Punjab Lahore, Pakistan
Email: khalid.im@pu.edu.pk

Muhammad Aboidullah
Institute of Education and Research, University of the Punjab, Lahore. Pakistan
Email: abiodullah.ier@pu.edu.pk

Abstract

Higher Education Institutions (HEIs) are facing more enormous challenges due to the quick spread of NOVEL COVID-19, which carried lockdown in the lives of people across the world. Countries are preparing to face the challenge as the pandemic may run for several months. A large number of academic institutions had shut their campuses and went online. In terms of e-education, developing countries are facing more challenges comparatively. The current study is designed to investigate the phenomena from the lens of emergency management theory, with a purpose to come up with a viable framework for taking proper actions. Another objective of the study was to examine commonalities and differences between a developed and a developing country in terms of preparedness, response, mitigation, and recovery. The study was conducted under the philosophy of social constructivism, following qualitative research design, applying phenomenology research method, with the help of interviews as a data collection technique. Thematic analysis was applied for data analysis with the help of NVivo 12. The results show there are significant differences in terms of 'preparedness', a considerable difference in terms of 'response' and 'recovery' and a minor difference in terms of 'mitigation' between developed and developing countries. The study is conducted during COVID-19 emergency and provides useful insights to understand faculty point of view and suggestions for improving the quality of e-learning and emergency preparedness.

Keywords: Emergency management theory, higher education, developing country, developed country, COVID-19, Pakistan, United Kingdom

Introduction

In the past two decades, the world is plagued by several emergencies in the shape of disasters, infections, and diseases outbreaks mainly known as influenza A (H1N1) (1918), Ebola (1976), Hanta Virus (1993), SARS (2003), MERS (2018) viruses and most recently COVID-19 (2019) has had a global impact in terms of resources, economic disruption and most importantly, human health. Emergencies cause major chaos in education systems across the world. Higher education institutions are often damaged during armed conflict, the spread of diseases or used for short-term accommodation of people rendered itinerant in such panic situations. The rapid technological and economic developments have placed bigger demands on education systems.

The recent COVID-19 emergency has witnessed a major paradigm shift about the attitudes demonstrated towards online education. The global change of online education adoption is moving students and teachers to another paradigm of learning (Shraim & Khlaif, 2010). E-learning is currently considered by many as an innovation. Exceptional educational experiences are boosting students and teachers to participate in remote learning communities through a collaborative learning process (Appana, 2008). According to contingency theory, teachers at higher education need diversified strategies to maintain competency (Gregory and Jones 2009). This shift from the traditional methods of teaching to modern technology-oriented methods is considered as electronic learning (E-Learning).

In this way, e-learning has quickly become the new standard for education. This new learning methodology incorporates both face-to-face communication and distant course delivery at a time and place of one's choice (Phahlane and Kekwaletswe 2014). Successful emergency management in education entails leadership, teamwork, and coordination across crossways professions, agencies, associations, and nations. Undefined roles, a lack of clear picture regarding a good chain of command and poor leadership are the most common scheduled and major shortcoming in emergency management and can result in misinterpretation and chaos (Kaptan, Arculeo and Hreckovski, 2015). The convergence of new online higher education systems needs to become more flexible to facilitate masses at large through 'distributed learning' (Stella and Gnanam, 2004). Recently, there has been renewed interest due to the outbreak of the COVID-19 pandemic and the growing measures aimed at the promotion of social distancing; it becomes imperative to explore the developed country lived experiences to replicate in a developing country context. To date, there is limited evidence in the literature on South Asian countries like Pakistan concerning the

adoption and inculcation of e-learning platforms. For instance, Tarhini et al. (2017) demonstrated that education mechanisms usually revolve around traditional and conventional methods which can be mainly attributed to the scarcity of financial and relevant human expertise. According to Straub (2009), their behavioural dynamics with regards to the usage of technology in an educational environment. This study uses emergency management theory as a framework, and it has become a contemporary agenda for policymakers, scientists, political leaders, scholars, managers, and academicians to cope up with global pandemic COVID-19. Social theory of knowledge exerted much focusing on teaching (Muller & Young, 2014) that fosters the importance of teachers' lived experience to understand the reality of today. Additionally, empowering teachers to share knowledge could be promising help for students in the emergency educational environment (Sinclair, 2015). The current study focused on teachers because they are the major constituent of the learning system. The individual nature of teaching has multiple boundaries of exposure and discipline of education (Cotronei-Baird, 2020).

Emergency management can help to reduce the challenges for higher education institutions. A systematic review of the existing body of knowledge regarding the adoption of e-learning platforms in developing nations reveals a dearth of knowledge amongst the higher educational institutions in Pakistan. There is a lack of comparative studies on higher education systems in developing and developed country contexts to explore the higher education framework from a teacher's perspective. The aim of this study is three-fold, understanding the lived experiences of higher education teachers from a developed country context, identifying gaps from a developing country context and finally, designing an emergency-based education framework. The current study contributes through an emergency management perspective (a theoretical contribution), identifying gaps among the experiences of teachers from developed and developing country contexts (contextual contribution), and promoting social distancing through a series of online interviews (methodological contribution).

The aim of this study boils down to the following research questions:

RQ1: How teachers from a developing country are experiencing the change in the education system during this COVID-19?

RQ2: How teachers from a developed country are experiencing the change in the education system during this COVID-19?

RQ3: What are the differences and commonalities in the ongoing education system during the COVID-19 emergency between a developed and a developing country?

RQ4: What is the way forward for a developing country?

Literature review

Fundamentally, the emergencies do not affect the individuals and organizations on an equal plane; instead, it has a capricious nature, i.e. its vulnerability can be attributed to political and economic factors (Boyce 2000). Natural disasters affect individuals and organizations in different ways due to unbalanced access to resources. Therefore, the first theory signifies the different factors associated with emergency management concerning the inclusion of political interests alongside business interests. Emergency management is an interdisciplinary branch of science and a prevalent issue in the area of management sciences. It contains several discipline technical fields, including strategic management, information technology, and professional knowledge.

The issue of emergency management has recently grown importance in the context of emergency scenarios, such as the provision of education to communities that are prone to natural as well as non-natural disasters. Currently, universities must take proactive initiatives to overcome technological communication challenges to expedite the adoption and development of customized online education system (Jones, 2004). The institutional learning and teaching strategies have been the heart of higher education transformation processes in the United Kingdom (Gibbs, 2000). Hence, it is imperative to explore and understand teacher experiences in this pandemic COVID-19.

The massive lockdown procedures in the outbreak of this pandemic COVID-19, have restricted the movement of the people to their homes due to which the higher education facilities are being directly affected. For example, amidst the growing COVID-19, the subject of emergency management has gained much attention and has become the centre of most researches. The trend of moving online is becoming a new norm for global higher education institutions (Kadiwal, 2020). However, education in the emergency framework is also imperfect as the concept of emergency usually taken as temporary (Rizvi, 2020). This study will explore the education framework for higher education institutions to overcome the challenges and avail the opportunities during this pandemic COVID-19.

Therefore, emergency management has been deemed as a potential tool that can be exercised by the policymakers in the higher education institutions to balance the blended education systems

(online and offline). Burde (2014) defined the provision of education in the context of emergency management framework is seen to be erroneous, mostly because the term 'emergency' itself implies or refers to a temporary condition that will subside over time the higher education establishments are undertaking and deploying the novel approaches to counter the challenges.

More importantly, there are a variety of emergency management principles that have been devised by developed nations like the USA, UK, Australia, New Zealand, Japan, France, Germany, and Spain. Through the collaboration amongst the government bodies (e.g. The Federal Emergency Management Agency (FEMA), National Governors Association, and the Emergency Management Institute), colleges, businesses, voluntary firms' and local communities, the USA has been able to chalk out a variety of principles. In the 21st century, such theories have garnered significant support from the international, national and local establishments.

The existing body of literature on public administration reveals that very sparse attention has been given to the subject of emergency management. However, some researches have been undertaken on the subject of emergency management (Comfort & Pitts 1996; Schneider 1998; Sylves 1994; Zimmerman 1985) which mainly focuses on emergency or governmental establishments. Historically, emergency management was viewed as a task which was only exclusive to the law enforcement and fire institutions with public and civil defence institutions coming to aid the former in the wake of a significant calamity. Since the 1940s and 50s, the profession of emergency management has transitioned into more of a synergistic role. Due to the synergistic and sophisticated nature of this field, emergency management must be carried on as a synchronized activity at the federal, state and local levels. A considerable amount of literature has been published on emergency management.

Emergency management can be viewed as the "area and profession that involves the application of the concepts of planning, management, science and technology to counter the effects of extreme circumstances that have a potential to incur extensive harm, injury, and damage to the lives and property of a large number of people and which may result in the disruption of everyday community life. The current study explored teacher's experiences from developed and developing country context, four stages (*mitigation, preparedness, response, and recovery*) of emergency management theory. Table 1 presents the details of every stage of the theory mentioned above:

Table 1 Four stages of emergency management (Wang and Pan 2005)

Four Stages	Details
Preparedness	Appropriate steps are taken before an establishment of crisis and enhance its response and operability.
Response	In a crisis, appropriate steps are taken to save people and avoid property damage and casualties.
Recovery	Necessary steps must be taken for the rehabilitation of the life support system and infrastructure network.
Mitigation	Adequate action is taken to reduce the effect of imminent crises, to minimize their effects and to predict other future crises.

There have been gradual developments in the emergency management theory conceptualizations (refer Table 2).

Table 2 Definitions of Emergency Management

Author	Definitions
(Petak, 1985)	There are four critical areas of emergency management comprises mitigation, preparedness, response, and recovery.
(Zlatanova and Holweg 2004)	Emergency management consists of five stages, which includes planning, mitigation, preparedness, response, and recovery.
In the view of Ji et al. (Huang 2005)	Emergency management is a method of successfully incorporating a range of social services, thus informing, monitoring and dealing with unexpected incidents based on an overview of their causes, processes, and consequences. According to Wang and Pan (2005), emergency management consists of four phases, including readiness, response, recovery, and rehabilitation.
(Wang and Pan 2005)	Emergency management comprises of four stages, which includes preparedness, response, recovery, and mitigation.
Emergency Management Australia (EMA), (Liu, 2009)	Emergency management is a mechanism to resolve the societal threats resulting from unexpected incidents, and it provides a structured approach to define, assess, evaluate and fix emergency problems. Emergency management consists of five actions: (1) creation of a context model, (2) risk detection, (3) risk analysis, (4) risk evaluation and (5) risk control.
In the view of Mitchell (Luo, 2009)	Emergency management applies to the recovery steps taken against existing or future disasters, along with the actions taken throughout the disaster period, the pre-disaster preparedness steps and the post-disaster relief measures.
Federal Emergency Management Agency (FEMA) of the USA (Zhang, 2010)	Emergency management leads to preventing, planning against, dealing with, and healing from disaster impacts through organizational research, structured decision-making, and distribution of existing resources to save lives, avoid accidents, and secure properties and habitats.

Table 3 summarizes the application of emergency management theory in a different context. Notably, Cooper et al. (2017) extended emergency management theory by a range of attributes, including experimentation within a group, student diversity, cyber environment, and verbal role play. This indicates that emergency management theory can be further extendable through different contextual grounding.

Table 3 Summary of studies on emergency management

Authors'	Title of Study	Context	Summary
(Kim et al. 2012)	Assessing roles of people, technology and structure in emergency management systems: a public sector perspective	Emergency responders of Buffalo October Storm 2006 USA	This study employed a survey-based questionnaire with 190 sample size from emergency respondents, including; Police, Fire, Medicine and Emergency managers. This study found training, support, task technology. The leadership of supervisors, labour, and logistics improves high emergency self-efficacy through effect emergency management.
(Cooper et al. 2017)	Critical Dimensions for the Effective Design and Use of Simulation Exercises for Emergency Management in Higher Education	Higher Education	This research expanded Hayes's dissertation (2015). The interpretive approach was introduced based on an interpretation of the qualitative material. The 16 semi-structured interviews were performed with educators and emergency response professionals to understand the real phenomenon. This study points out that a structure for developing and using simulator exercises for emergency response practitioners may be relevant in the context of higher education but should also be implemented in a nuanced manner. This study offers the latest, systematic structure for higher education.
(De Sisto et al. 2019)	Emergency management and HRM in local governments: HR professionals as a network managers	Local Governments	The study adopts an 'exploratory' approach. Both of the 79 shire councils (local governments) in Victoria collaborated in this study. Our results illustrate the importance of building better partnerships among HRM and EM departments and the current difficulties of doing so, especially around low formalization and articulation of EM roles in a resource- and time-constrained environment.

Methods

Study context and research philosophy

The research questions of this study revolve around the lived experience of teachers during this pandemic COVID-19. Accordingly, phenomenology, as a research philosophy requires when the research problem aims to understand human experiences (Creswell, 2014). The fundamental goal of this research philosophy is to arrive at a sketch of the nature of the particular phenomenon, and transcendental phenomenology is one of the approaches that illustrate 'lived experience' (Lewis, 2015). In the current study, participants were given descriptions to generate an essence of the lived experience during this pandemic COVID-19. This pandemic makes everyone realized the importance of e-learning for higher education. The developing country context has an altogether

different approach to the education model in this emergency. The main aim of this study was to explore and demonstrate a framework for developing country higher education system based on a developed country response during this pandemic COVID-19. At this moment, higher education systems can be divided into two delivery methods (online and offline). Pakistan, as a developing country context, has a dual higher education system where only two universities (Allama Iqbal Open University, Virtual University of Pakistan. Preston University) are fully equipped with online education. However, the Higher Education Commission of Pakistan (HEC, 2020) recognized 122 universities (87 Public and 35 Private). Consequently, universities in Pakistan are experiencing a significant gap in online education adoption. Moreover, Pakistan is facing a higher poverty rate, and lower adaption is creating a lot of challenges (Hussain *et al.*, 2020). Alternatively, the current study considered the UK as a developed country context and coded as 'study context 2'. According to UUK (2019), during 2018 and 19, there were 165 higher education institutions in the UK with a demonstrated road map of e-learning implementation. Hence, the teacher's perspective from this context may provide profound insights into higher education practices during this social distancing (Goodison, 2001).

Participants

The Snowball sampling technique adopted to recruit teachers as participants of this study. The first participant from both study contexts (Pakistan and UK) considered as the lead to other participants. Considering the availability of the participants, the researchers targeted three from each context (Pakistan and UK); however, the researchers got an additional participant (opportunistic sampling) from Pakistan. A total of 7 teachers (four from Pakistan and three from the UK) recruited as participants for this study. Table 4 presents study context (1 for Pakistan and 2 for the UK), gender (six males and one female), age (range from 30 to 52) and disciplines (Management science, Science & technology, and arts & unanimities) of every participant.

Table 4. Sample demographic information

Participant No.	Study context	Gender	Age	Discipline
PK case 1	1	Female	38	Arts & Humanities
PK case 2	1	Male	52	Management Sciences
PK case 3	1	Male	39	Management Sciences
PK case 4	1	Male	40	Science & Technology
UK case 1	2	Male	30	Management Sciences
UK case 2	2	Male	35	Management Sciences
UK case 3	2	Male	48	Management Sciences

Data collection procedure

Due to the COVID-19 pandemic situation, taking the precautionary measures of social distancing (physical distancing), the final list of participants were contacted and communicated about online meetings (Hangout for Pakistan and ZOOM for the UK) for the interviews. Upon the participant's confirmation and availability, in-depth semi-structured interviews were conducted using an interview protocol. Consent was also obtained to record interviews with a digital voice recorder embedded within the online meeting application. Initially, a formal letter shared using a screen sharing function with the participants at the time of the interview, stating the consent and a brief description of the study. In the first phase of the interview, participants were asked about demographic variables such as gender, age, and discipline. In the second phase, participants were asked the following questions; how did your university plan to respond in this emergency? What are the facilities provided by your university in this emergency? Have your university arranged any training program for e-teaching in this emergency? How would your expectations vary between physical and digital interaction during classes? What kind of change e-learning brought into your learning processes? What are your suggestions for your university to be proactive in such emergencies? Interviews time durations varied between 20 and 25 minutes.

Data analysis and coding procedure

Thematic data analysis approach was applied as it helps a researcher to find out meanings of realities, experiences, events, and so on (Braun & Clarke, 2006). The audio/video recordings were transcribed verbatim to extract significant themes. NVivo 12 was used to record the categories that emerged from the respondents' transcripts. It was a three-phase process, in first phase transcripts were read to get a deep understanding of the data, in second phase parent and child themes were developed with the help of NVivo 12, in the third phase, significant themes emerged by merging child themes into parent themes and sometimes parent themes into parent themes those were mutually exclusive to make those themes exhaustive. Identified themes and the representative quotes relevant to each research question are provided below, the language of the quotations has not been changed for any language improvement.

Findings

Study context 1 (Pakistan)

Preparedness

The recovery of the resources depends on emergency preparedness. A research question was designed to examine how teachers perceive emergency preparedness by higher education institutions (HEIs). The thematic analysis of the interviews revealed several high-level themes related to emergency preparedness (see Figure. 1). These included lack of required preparations, non-cooperative behaviour by the university, enough self-efficiency, forceful adoption of virtual education. Most of the respondents perceived that the HEIs were not prepared to face any emergency. All the participants agreed that there was no strategic planning for virtual education in terms of training, contents, and related infrastructure. The following quote articulates this point:

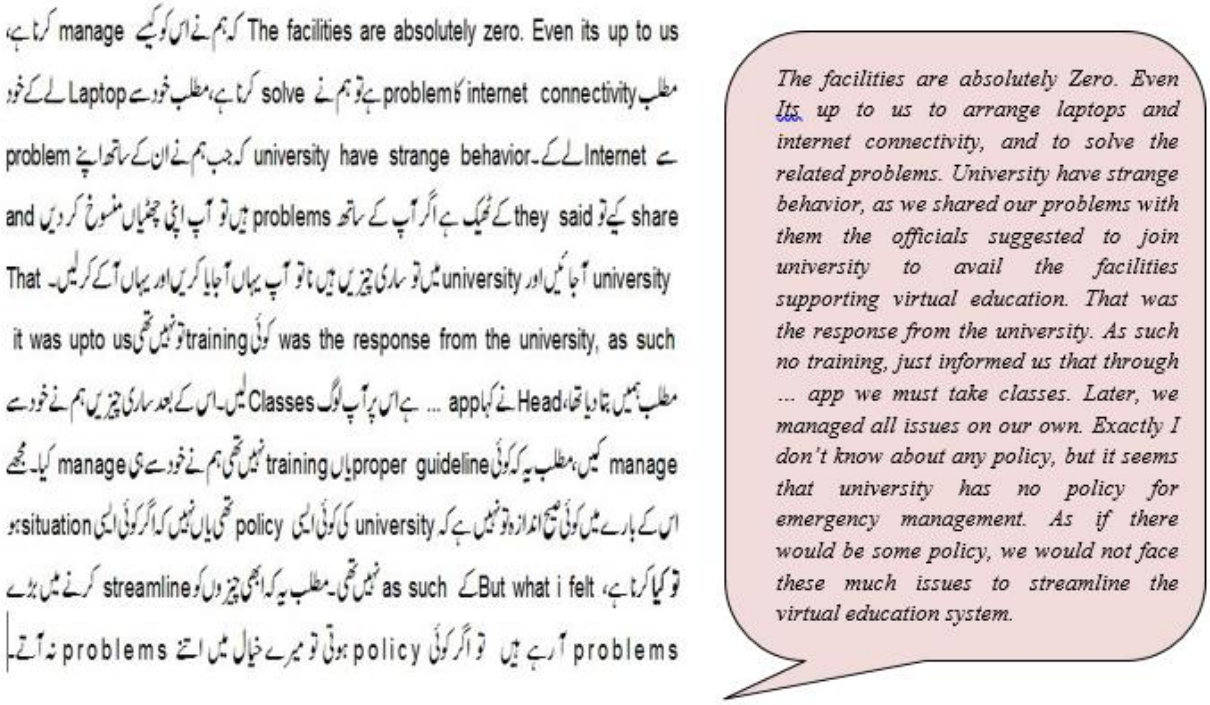


Figure 1. Quotation in local language and translation in English (PK case 3)

However, one of the participants believed that his institution was somewhat prepared in terms of infrastructure, but still, there was no strategic planning for online classes in terms of emergency preparedness.

"…And interestingly, the laptops were already provided to the faculty over the years by the university. So, which means that the primary requirement was there…we have been using these gadgets for several purposes for information technology purposes, but never had we used it for a meeting or a classroom presentation or something…an online Internet meeting was had never been in use" (PK case 2, Management Sciences)

The participants (PK Case 1, 2, 3,4) unanimously mentioned that if they talk about themselves, they were enough self- efficient to use these e-tools for various purposes, but several colleagues known to them were facing difficulties in managing online classes.

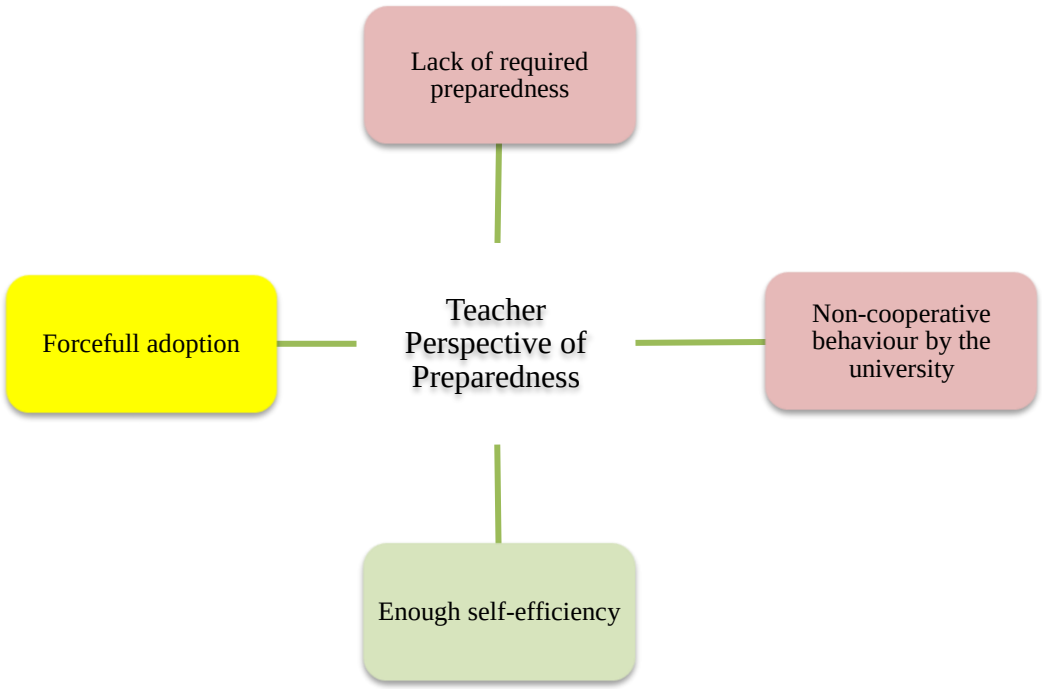


Figure 2. Teacher perspective regarding emergency preparedness (Pakistan)

All the participants agreed that virtual learning is not a choice but a forceful adoption.

"You are not working from home; you are trying to work from home in an emergency we should keep in mind" (PK, case 4, Science & Technology)

Response

The response is a conscious action towards a situation. Usually, humans respond in two ways, i.e. short-term response, and long-term response. The universities adopted a pro-active approach and responded (short term response) within one week of the lockdown. However, mostly the response

was related to the information provision and informal training to the teachers for online classes. Most of the universities are using hangouts meet, and zoom applications for virtual classes as those are free for the academics during COVID-19 emergency.

With a purpose to develop a viable emergency management framework, the participants were asked to give suggestions for a long-term response. It was suggested by the participants that there is a need to develop a common platform for virtual classes. Furthermore, there is a need for specialized training programs to make effective use of e-tools in education. One of the respondents suggested that an electronic database with students' contact details should be compiled and access should be provided within departments online. They believe that virtual education requires a different set of skills, infrastructure, strategies, and the contents to be delivered. Therefore, unique contents should be designed, and there should be a few mandatory online classes/guest lectures during every session for a blended experience. Furthermore, there should be a facility in higher education institutions to record lectures in a physical environment as per the choice of the faculty members. We cannot put all eggs in the same basket; there are subject-based differences for teaching and learning, so a system tailoring all types of subjects is required (PK cases 1, 2, 3, and 4).

Since the data was collected from public sector universities and a good number of students in the public sector universities belong to lower middle class, therefore, one of the participants (PK, Case 3) suggested that a survey should be conducted and infrastructure (Laptops and internet devices) should be given to the students, as they do not afford. The researcher's reflections here are that e-tools use is not a significant problem, lack of training, nature of the subjects, mode of lecture delivery were the concerns. The faculty member from the discipline of arts and humanities also highlighted the non-availability of the contents in electronic format. It confirms that all subjects cannot be treated similarly. Understanding the local context, one of the participants highlighted the need for electricity backup plans (Solar systems) the case 3 reported if the class is going on and your internet device or laptop is out of battery then you may lose the chance of class participation.

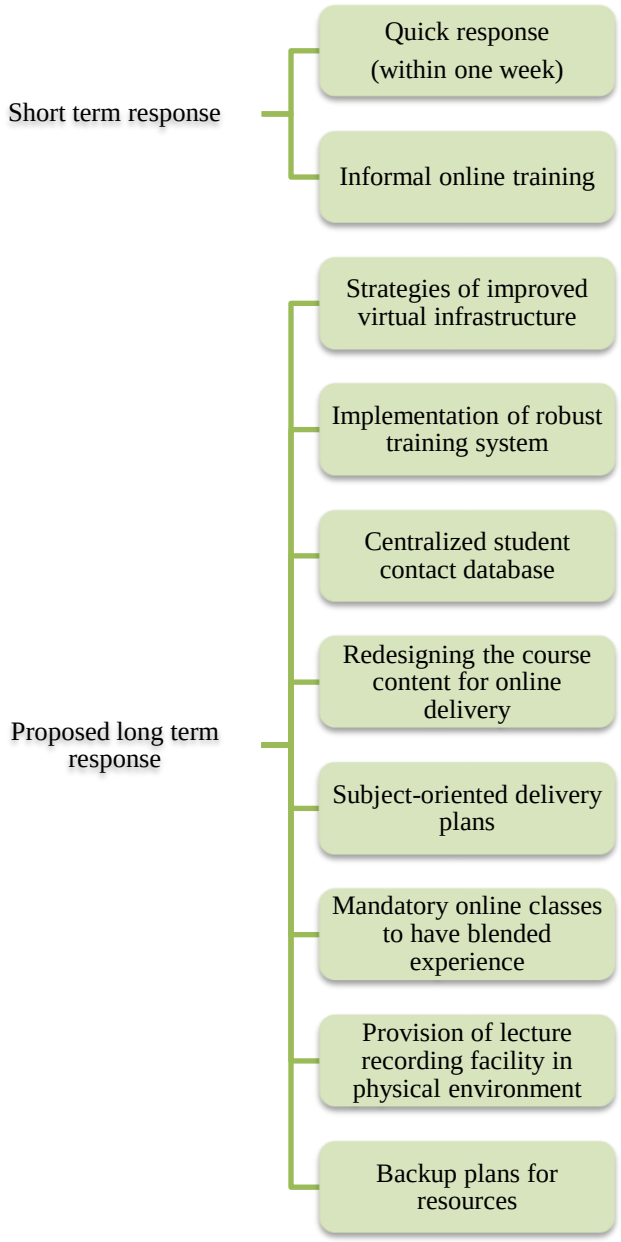
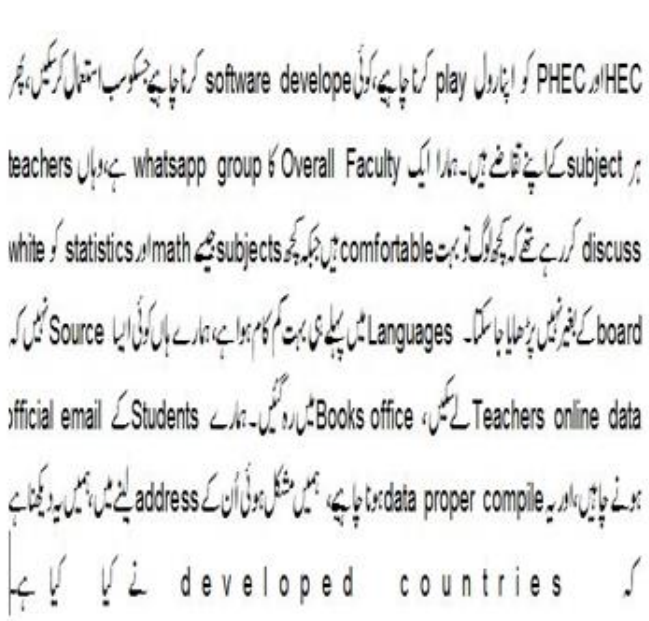


Figure 3. Teacher perspective regarding emergency response (Pakistan)

One of the participants suggested that we should not reinvent the wheel, should look at the best practices around the globe and contextualize the selected one, and with a blend, we can develop a viable strategy (PK case 4, Science & technology). Following are a few quotations from the respondents:



HEC [Higher Education Commission] and PHEC [Punjab Higher Education Commission] should play their role and should develop a software considering the different subjects' requirements. Faculty members, in our Whatsapp group discussed that a few of them are comfortable but a few subjects particularly statistics is difficult to teach in online classes. There is comparatively little contents are available in languages, we left our books in offices and there is no online data source supporting languages. Furthermore, it was difficult to find students 'contact details, as the data was not compiled. We should follow the best practices of the developed countries. (PK, Case 1, Humanities & Arts).

Figure 4. Quotation in local language and translation in English (PK case 1, Humanities & Arts)

> *... In our country, there is another issue which is the digital divide, all of us do not have the facility to go online….If we want to develop a project on a mass scale, we should keep in mind this context…. We should learn a lesson from this situation and should observe how the other countries of the world are responding to this situation.... (PK, case 4, Science & Technology)*

Mitigation

It was important to gauge the activities carried out by academia during this pandemic. The respondents were asked to mention their teaching methodologies, evaluation techniques, and control strategies. The content analysis of the interview transcripts showed that the respondents were trying to cover the contents through live and recorded lectures, online discussions during or

after the lecture, using the hand raise option in zoom and chat boxes for other apps to make the class interactive, they are offering graded activities and most of the time it is up to the faculty members to design graded activities as per their course requirements. However, one of the participants showed his concern regarding evaluation, as under:

> *...I prefer theoretical answers to my questions instead of multiple-choice questions. (PK, case 2, Management Sciences).*

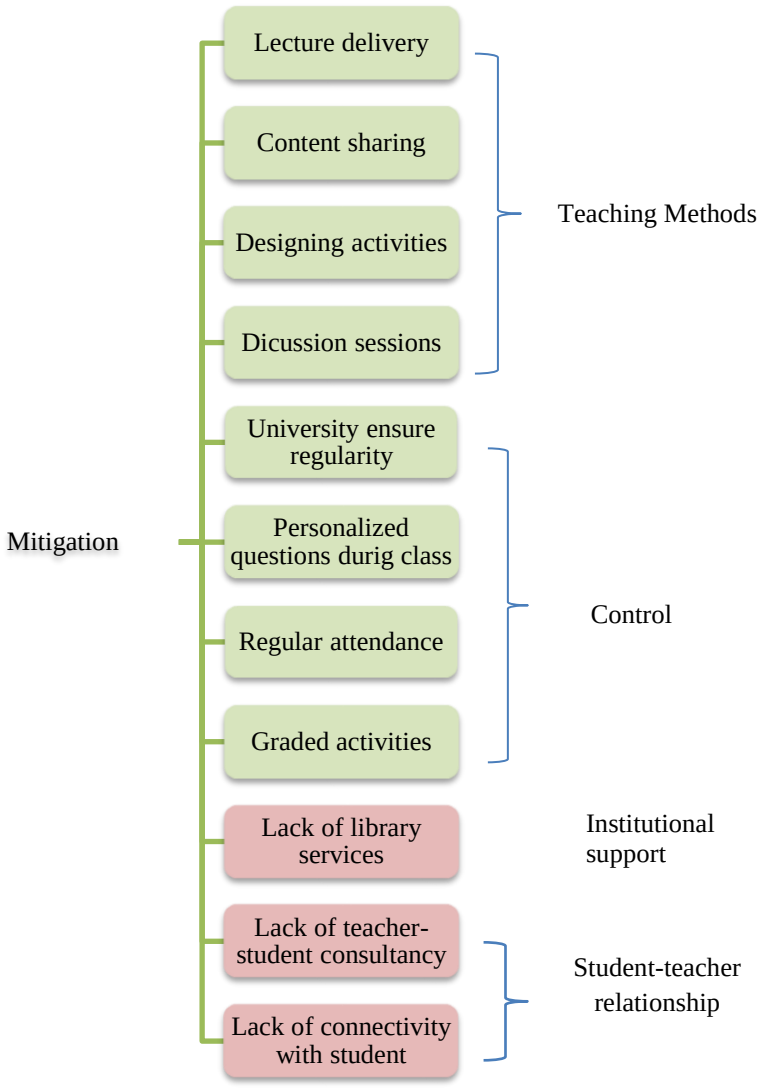


Figure 5. Teacher perspective regarding emergency mitigation (Pakistan)

The HEIs are trying to have a check and balance to ensure the class's regularity. Faculty members ensure students' participation using different techniques, i.e. personalized questions, random and regular attendance, and designing graded activities. However, no effective library services are

offered to the three participants (PK, case1, 2, and 3), whereas one participant reported that he is receiving proper library help (PK case 4).

However, there are serious concerns about the student-teacher relationship, lack of connectivity, and student consultancy could affect the quality of education (PK, case1, 2, 3, and 4).

Recovery

Recovery is the action or process of regaining possession or control of something stolen or lost. It is equally important to investigate how a response to the emergency mitigates the recovery. Concerning this, teachers had several observations and suggestions. PK case 1 reported privacy concerns and mentioned that teachers are usually informal in class, and the students record those videos and share with others. Therefore, they are supposed to be very careful and formal. This situation creates an artificial environment that may be less rich in terms of learning. The participants mentioned that they are over-burdened as they need to work a lot on redesigning the courses and designing new activities. The researcher observed that the faculty members were busy in online meetings and classes, as during the data collection, it was difficult for them to manage time for conducting interviews.

A threat to the recovery was poor internet connections of the students, the researcher reflex that for a successful communication sender, medium, and receiver's role is equally important. Here the participants showed a concern that common issues can be a threat to the recovery process. Another concern was that they had to compromise the course contents. A primary concern was the absence of student-teacher interaction since the researcher is also a faculty member, therefore, endorsed this point there are different kinds of students, confident, shy, struggling, so a teacher adopts different strategies to teach all kinds of the students in a physical classroom environment. In the virtual environment, it is difficult to convince all students to participate actively. Furthermore, all respondents believe that the absence of physical cues and nonverbal communication from both sides is a big hurdle that can affect the recovery process seriously.

> *But the idea here is that in a case study [assignment], when we are conducting in the classrooms [physical], we are also looking towards their communication skills, their ability to criticize someone or something or some issue, their ability to innovate, improvise, their ability to relate to the various topics in the book or the theories in the book [that is missing in virtual environment] … I had to reduce a bit of the content because I had to spend*

more time in prompting the students to identify whether they are getting it or not. (PK, case 2, Management Sciences)

However, almost all the subjects found it an opportunity to learn, to be more productive, to redesign their activities, to minimize the academic loss of the students, for their mental engagement to divert their attention to avoid anxiety and keep them busy in healthy activities during this pandemic.

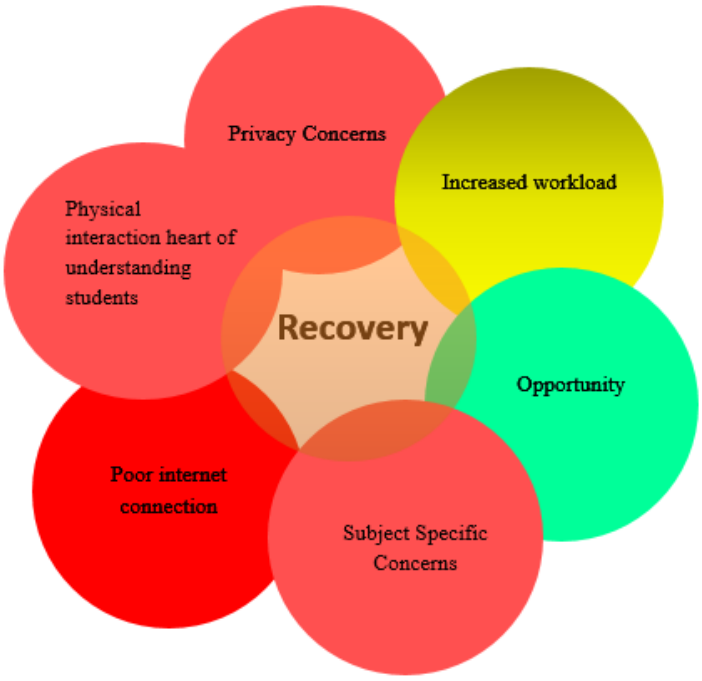


Figure 6. Teacher perspective regarding emergency recovery (Pakistan)

Study context 2 (United Kingdom)

Preparedness

The preparedness in the pandemic situation (COVID-19) was a real challenge for higher education institutions. The current study aims to explore the perception of teachers from a developed context (UK) about the preparedness. Thematic analysis of verbatim (teacher's interviews) illustrates the range of themes (refer Figure 5). Even this emergency pushed many things off-track, teachers at higher education institutions perceived positive implanted strategies such as the establishment of online classes, a material update on the university website, advanced virtual meeting applications,

email communications and collaborated software. Below verbatim support, the advanced virtual applications, the use of such applications made the delivery smooth and easy.

> *"They are using WEBEX; they find it very easy. I conducted six classes online using this application, it is very smooth, you can mute/unmute them, and I can see my students." (the UK, case 2, Social Sciences)*

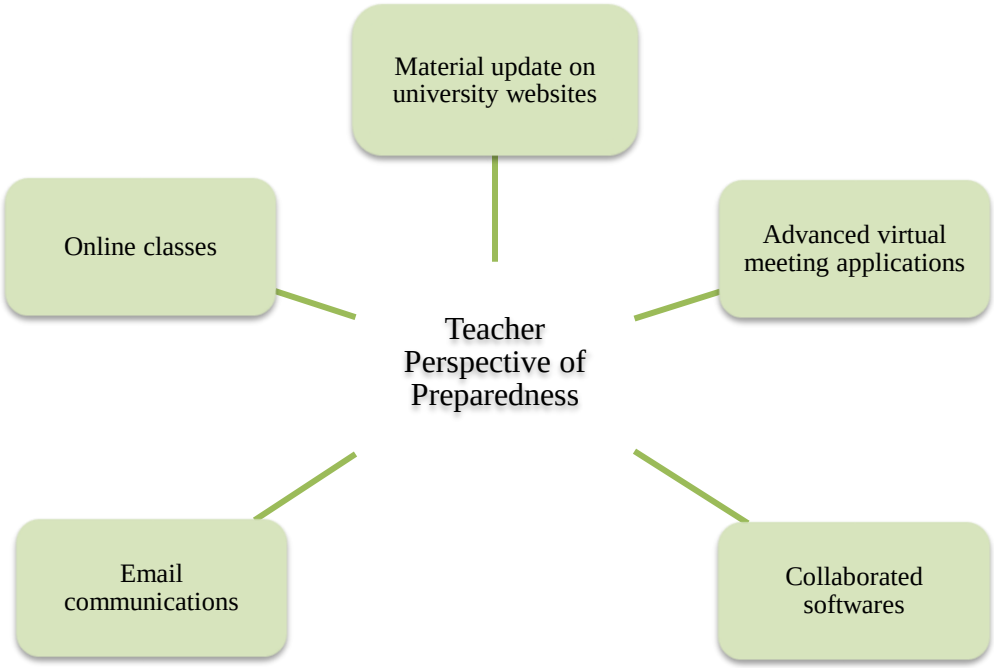


Figure 7. Teacher perspective regarding emergency preparedness (United Kingdom)

Response

The emergency management theory conceptualizes 'response' as current as well as future planning. The natural response in this pandemic (COVID-19) could be related teacher's perception of response in the short-term (social distancing through online classes, and developing strategies for online delivery), and proposed long-term (strategies of improved virtual infrastructure, implementation of the robust training system, and redesigning the course content for online delivery), refer figure 6. These themes demonstrate teacher's perceptions of the severe actions of higher education institutions to this pandemic. Based on the ongoing experience of teachers, redesigning course content for online delivery is essential, since not all content could be transferred online effectively. Secondly, robust training for all stakeholders must be designed; teachers need to be on top of learning online teaching to sustain competitive advantage. Following a statement from a teacher articulate the importance of training:

"University can make sure this training as essential for all the teachers and they have to complete, and they can put this restriction on all the teachers. They have to complete this training, let's say within a few days or a week. If you don't learn these technologies within a few days or I would say within a week, then you will be left behind." (the UK, case 1, Management Sciences)

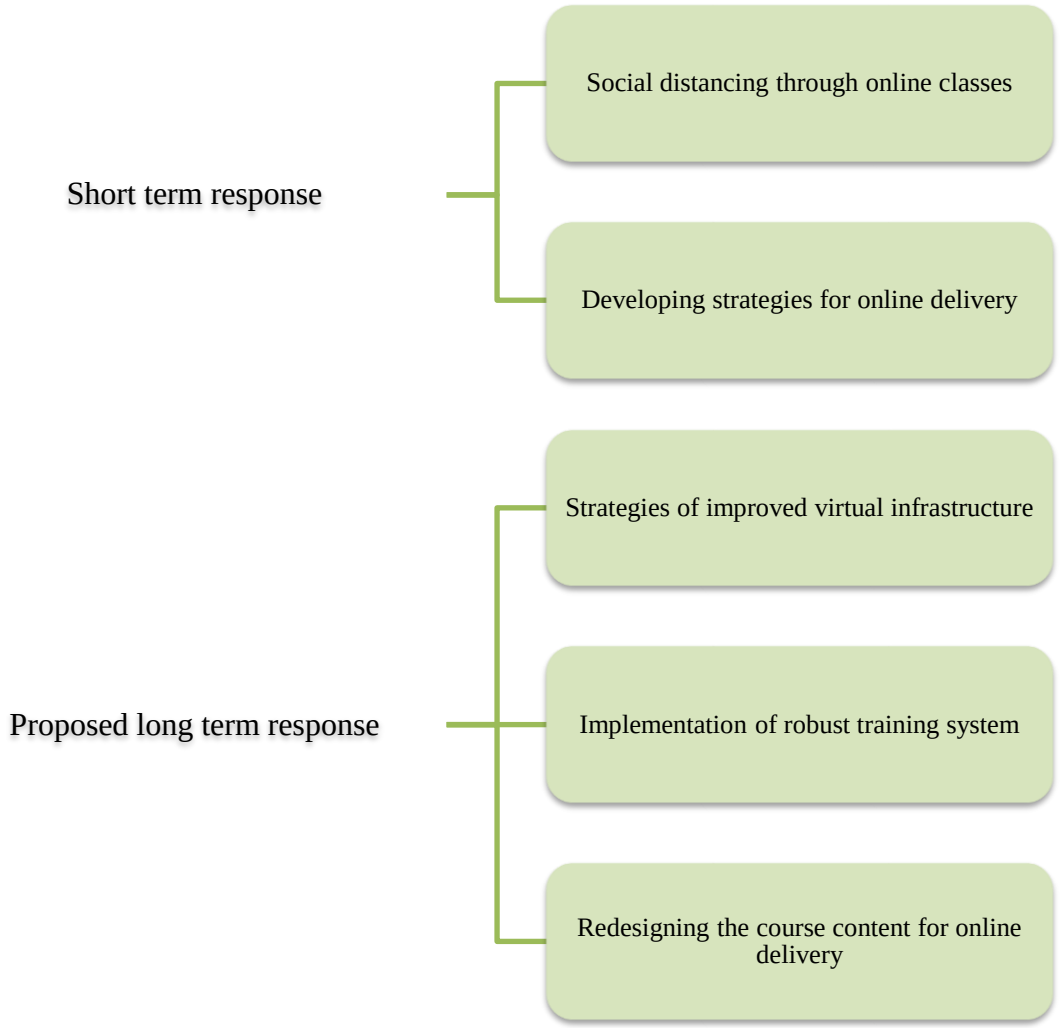


Figure 8. Teacher perspective regarding emergency response (United Kingdom)

Mitigation

Another aspect of emergency management theory is 'mitigation'; teachers from the UK perceived numerous mitigation themes. These themes are further sub-categorized under relevant sub-themes. Learning online teaching and content sharing categorized as theme under teaching methods, low

quality of training efforts as institutional support sub-theme, personalized questions during class, and virtual group presentations, as control strategies, most importantly, lack of teacher-student consultancy, and lack of connectivity with students as a student-teacher relationship.

> *"I told them I am going to ask you questions about the previous class, I pint point students. One-by-one I unmute them, and I asked them questions" (the UK, case 2, Management Sciences)*

Only one respondent expressed that the quality of training was not appropriate as a part of institutional support in the following words:

> *"They have arranged online training, our IT department, I have attended on offline, and one online training but I am not happy with the quality of the training" (the UK, case 2, Management Sciences)*

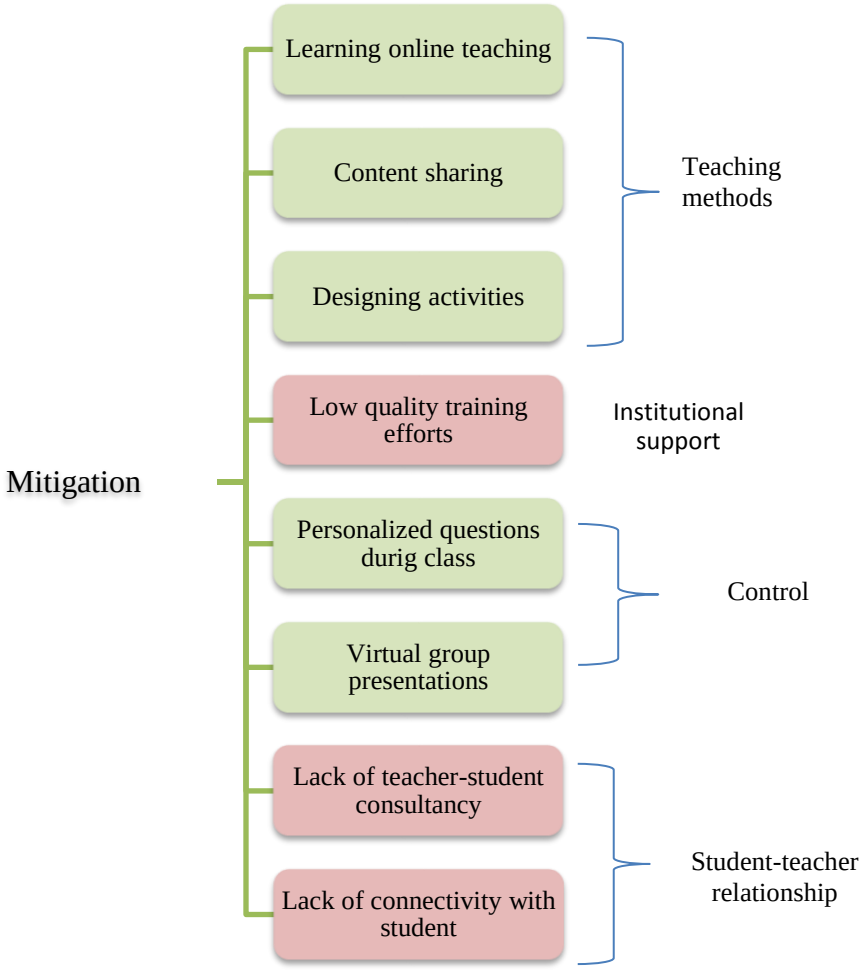


Figure 9. Teacher perspective regarding emergency mitigation (United Kingdom)

Recovery

Recovery is the most crucial stage of emergency management theory. After a detailed thematic analysis, the teacher's perception of how the university has planned to recover in this pandemic (COVID-19). Given the challenging situation, the traditional education physical setting empowers more teachers and students to interact, and the useful interactive experience leaves a long-lasting impact on learning. After thematic analysis, following themes came out: physical interaction as the heart of understanding students, digital teaching as a different experience, limited visibility of student expression, considered as the most critical, increased workload as emotional stress, lastly, optimal use of technological tools (opportunity), was the most favourable outcome. Following statements from a respondent expressed about the critical (interaction) aspect of recovery:

> *"Digital interaction is completely different from offline. So there are some facilities in the online environment which are missing offline, but the main positive factor of the offline environment is face to face interaction, which is missing yet". (the UK, case 1, Management Sciences)*
>
> *"This is one of the issues; I am facing, because my teaching methodology is an interaction base, I ask them questions, physical interaction. I cannot interact with them effectively; it is a bit difficult in engaging students". (the UK, case 2, Management Sciences)*

The following statement from a respondent revealed about the optimal use of technological resources:

> *"You are using existing resources more efficiently. For example, your Wi-Fi, you are using it at an optimal level. You can just find any resource online quickly, and you can share with the audience by pasting a link while teaching". (the UK, case 1, Management Sciences)*

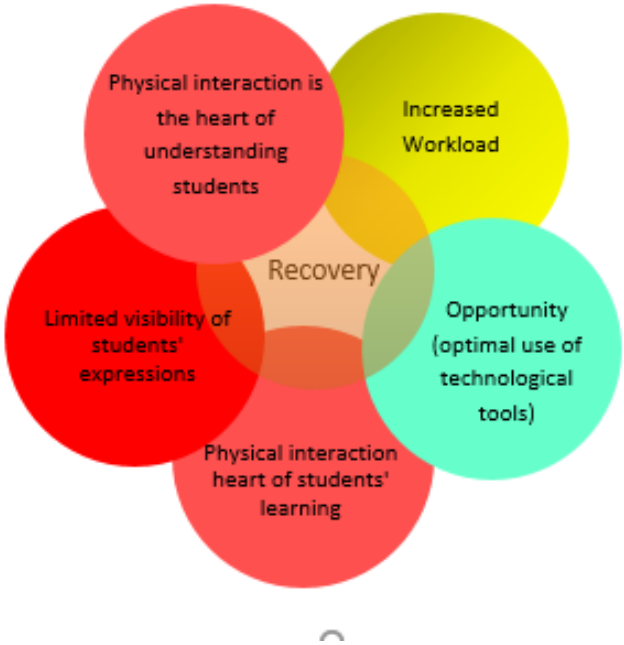


Figure 10. Teacher perspective regarding emergency recovery (United Kingdom)

Discussion and recommendations

A comparative analysis of the research findings is presented in Table 5. The study highlighted the major differences in terms of infrastructure and training in the developed country, they were more prepared, such as they established online classes, the course material was already updated on the university website, advanced virtual meeting applications were there, connected with students through emails, and developed collaborating software. On the contrary, the developing country was not prepared, no standardized infrastructure (hardware and software), contents were not ready for online classes, there was no formal training and guideline. However, the faculty members were enough self-efficient in using e-tools. It is noteworthy that, the COVID-19 outbreak from China in December 2019 and both the developed and developing countries' education systems responded in March 2020. After locking down, and during that period, they did not even mentally prepare their faculty members. Also, in the case of the developing country, the libraries were not prepared to serve its users remotely.

As for as the response is concerned, the short-term response was similar to both countries. However, the developing country required extensive long-term planning to get prepared for any

unexpected situation. There is a considerable difference in the requirements of long-term planning between the developed and the developing countries. In a developing country, student's affordability of the required infrastructure was a hindrance.

Findings related to mitigation (the act of reducing the severity) from the developed and developing countries showed that there was a minor difference between the two contexts. HEIs and faculty members from both countries were taking steps almost in similar directions.

The faculty members who took it as an opportunity believe that it is good for students to keep them engaged in a healthy activity during this pandemic. Earlier, Sinclair (2001) suggested, education in emergencies provides a sense of normality and restore hope through access to the 'ladder' of education. Despite taking similar steps, in terms of 'recovery', there are considerable differences in the perceptions among teachers from both countries. The reason might be the major differences in the 'preparedness' between two contexts. The three stages of EMT are equally important for a successful 'recovery', poor performance in any of the three stages can affect the success of the 'recovery'. Although the current 'mitigation' efforts are similar in both contexts, still the 'recovery' cannot be expected at a similar level. It seems, if the developing country works proactively on the 'preparedness' and long-term 'response', the chances of 'recovery' can be tremendously enhanced in case of any potential emergency.

The study offers twofold research implications, i.e. theoretical and managerial. A systematic review of the existing body of knowledge regarding the adoption of e-learning platforms and emergency management reveals a dearth of knowledge. Only a few studies applied emergency management theory in the education sector (Cooper et al. 2017; Shraim and Khlaif, 2010). The current study is an effort to fill this gap and will add significantly to the body of available literature, particularly regarding developing countries.

In terms of practical implications, the study findings suggest that the post-COVID-19 education system will demand a blend of virtual and physical classes. The study findings suggest the following way-outs:

- Since the non-availability, low quality, and non-affording internet connections and packages for the students is a big challenge. HEIs can coordinate with the local telecommunication sector and offer some student packages with good internet speed. Efforts should be carried out to remove the digital divide. Shraim and Khalif, 2010 also found the digital divide as a big constraint in e-reading.

- There is a need for awareness and counselling for the teachers that e-education is adopted to minimize the educational loss, not as a substitute for the physical classes. Along with efforts to make virtual experience effective, they have to adopt e-education with its limitations.
- During this situation, a clear guideline should be provided by the HEIs as soon as possible related to the course contents coverage, teaching strategies, and graded activities.
- Another qualitative study should be conducted to understand the students' perspective and experience of e-learning.
- After the emergency, a proper emergency management plan should be developed by the education department generally and higher education departments specifically.
- Best practices adopted at the international level during the COVID-19 emergency should be explored and contextualized.
- Once the emergency is over extensive surveys should be conducted throughout the country to investigate the situation of recovery and to gauge the experience of the teachers and the students. Best practices from the local context will further help to contextualize the international practices.
- Faculty require robust training to develop online courses and for designing activities.
- Post COVID-19 emergency, a few online classes/guest lectures should be a mandatory part of every session to train the students of different badges and the faculty members. It will help to minimize the educational loss in case of any potential future emergency. Thowfeek and Hussin (2008), also suggested that the mandatory use of e-learning applications has a significant influence on promoting e-learning.
- Other developing countries with similar circumstances may adopt the same framework presented in this study.

Table 5 Summary of differences and commonalities between study contexts

Variable	Study context 1 (Pakistan)	Study context 2 (United Kingdom)	Common Perspective	Gap
Preparedness	Forceful adoption Enough self-efficiency Lack of required preparedness Non-cooperative behaviour by the university	Online classes Email communication Material update on university websites Advanced virtual meeting applications Collaborated software	-	Major differences
Response	Quick response (within one week) Informal online training Strategies of improved virtual infrastructure Implementation of the robust training system Redesigning the course content for online delivery Centralized student contact database Subject-oriented delivery plans Mandatory online classes to have blended experience Provision of lecture recording faculty in the physical environment Backup plans for resources	Social distancing through online classes Developing strategies for online delivery Strategies of improved virtual infrastructure Implementation of the robust training system Redesigning the course content for online delivery	3	Considerable differences
Mitigation	Lecture delivery Content sharing Designing activities Discussion sessions University ensures regularity Personalized questions during class Regular attendance Graded activities Lack of library support Lack of teacher-student consultancy Lack of connectivity with student	Learning online teaching Content sharing Designing activities Low-quality training efforts Personalized questions during class Virtual group presentations Lack of teacher-student consultancy Lack of connectivity with student	6	Minor differences
Recovery	Privacy concerns Physical interaction heart of understanding students Increased workload Opportunity Poor internet connection Subject-specific concerns	Digital teaching - different experience Physical interaction heart of understanding students Increased workload Limited visibility of student expressions Opportunity (optimal use of technological tools)	3	Considerable differences

Note: criteria for gap categories (5 or more common themes = Minor differences, 3 or more common themes = considerable differences, 2 or lower common theme = Major differences

Conclusions

The study explored the status of emergency management in two countries, and cases were taken from a developed and developing country. Findings depict that in the developed country, initially, the faculty members were not ready. However, the infrastructure was there, they mobilized their infrastructure, and started classes soon after the emergency declared by their state. However, they felt that virtual education is an altogether different experience; mainly, they were not satisfied with the interaction that they were experiencing with their students. Very soon, they realized that unique content deployment is required to increase the effectiveness of the online education system.

On the other hand, teachers from the developing country faced a different situation, it was not only a matter of willingness and mental preparedness, but the required infrastructure and in some cases required training was absent. Notably, the teachers from both contexts equally showed their concerns regarding student-teacher relationship in terms of interaction. Quality of education and effectiveness were of paramount importance as the teachers from both contexts compared it with the physical environment. The developing country is facing more challenges when it comes to 'internet connectivity'. It can severely affect the quality of education in an online education system. However, the teachers took it as an opportunity to optimal utilization of ICTs, and to keep their students mentally engaged in a series of specific activities during the current panic situation. They also believe that they are learning from this experience and online classes save their time (no travelling, no formal dressing, and got more time for the family and the research projects). The research findings infer that the teachers from both contexts are trying to compare virtual classes with the physical ones. It seems that the problem is more with the thinking style, virtual classes are not a *substitute* for the physical classes but an effort to minimize the loss, and it is not a replacement. A similar understanding was reported in previous studies (Aydın and Tasci, 2005; Shraim and Khlaif, 2010; So and Swatman, 2006; Watkins, Leigh and Triner, 2004). As, if the physical environment could be replaced with virtual classes, then there might be more virtual universities in the world. Virtual education has its limitations, and we should adopt this teaching methodology along with its limitations. However, there is a need to get ready for any potential emergency; the best practices by the virtual universities may be consulted. Strategies should be adopted to design the online teaching methodologies, which may be more productive and at par with the ideal virtual environment.

References

Aagaard, J. (2017). Introducing postphenomenological research: a brief and selective sketch of phenomenological research methods. *International Journal of Qualitative Studies in Education, 30*(6), 519–533. https://doi.org/10.1080/09518398.2016.1263884

Appana, S. (2008). A review of the benefits and limitations of online learning in the context of the student, the instructor, and the tenured faculty. *International Journal of E-Learning*, *7*(1), 5–22.

Aydın, C.H., & Tasci, D. (2005). Measuring readiness for e-learning: Reflections from an emerging country. Educational Technology and Society, 8(4), 244–257.

Boyce, J. K. (2000). Let them eat risk? Wealth, rights and disaster vulnerability. *Disasters, 24*(3), 254–261.

Burde, D. (2014). *Schools for Conflict or for Peace in Afghanistan*. Columbia University Press.

Comfort, L. K., & Pitts, K. (1996). Improving emergency management: a total quality management approach. *International Journal of Public Administration*, *19*(11–12), 2113–2139.

Cooper, V., Forino, G., Kanjanabootra, S., & von Meding, J. (2017). Critical dimensions for the effective design and use of simulation exercises for emergency management in higher education. *Journal of Applied Research in Higher Education*.

Cotronei-Baird, V. S. (2020). Academic hindrances in the integration of employability skills development in teaching and assessment practice. *Higher Education, 79*(2), 203-223.

Creswell, J. W. (2014). *A concise introduction to mixed methods research*. SAGE publications.

De Sisto, M., Cavanagh, J., McMurray, A., & Bartram, T. (2019). Emergency management and HRM in local governments: HR professionals as network managers. *Asia Pacific Journal of Human Resources*, *57*(2), 227–246.

Gibbs, G., Habeshaw, T., & Yorke, M. (2000). Institutional learning and teaching strategies in English higher education. *Higher Education, 40*(3), 351-372.

The implementation of e-learning in higher education in the United Kingdom: The road ahead. *Higher Education in Europe, 26*(2), 247-262.

Gregory, J., & Jones, R. (2009). 'Maintaining Competence': A grounded theory typology of approaches to teaching in higher education. *Higher Education, 57*(6), 769–785.

Hall, E., Chai, W., & Albrecht, J. A. (2016). A Qualitative Phenomenological Exploration of

Teachers'Experience With Nutrition Education. *American Journal of Health Education, 47*(3), 136–148.

HEC (2020). Higher Education Commission Recognized Campus. Available at https://www.hec.gov.pk/english/universities/Pages/DAIs/HEC-recognized-Campuses.aspx (accessed on April 13, 2020).

Huang, C. F. (2005). Theory and practice of natural disaster risk assessment. *Beijing: Science Press*, *152*, 158.

Hussain, M., Butt, A. R., Uzma, F., Ahmed, R., Irshad, S., Rehman, A., & Yousaf, B. (2020). A comprehensive review of climate change impacts, adaptation, and mitigation on environmental and natural calamities in Pakistan. *Environmental monitoring and assessment, 192*(1), 48.

Jones, N., & O'shea, J. (2004). Challenging hierarchies: The impact of e-learning. *Higher Education,* 48(3), 379-395.

Kadiwal, L. (2020). Religion and education: comparative and international perspectives. *Compare: A Journal of Comparative and International Education, 50*(1), 146–153.

Kaptan, K., Arculeo, C., & Hreckovski, B. (2015). *Original research*. 1–11.

Kim, M., Sharman, R., Cook-Cottone, C. P., Rao, H. R., & Upadhyaya, S. J. (2012). Assessing roles of people, technology and structure in emergency management systems: A public sector perspective. *Behaviour & Information Technology*, *31*(12), 1147–1160.

Lewis, S. (2015). Qualitative Inquiry and Research Design: Choosing Among Five Approaches. *Health Promotion Practice*, *16*(4), 473–475.

Liu, C. (2009). *Meteorological Disasters for Traffic*. China Meteorological Press, Beijing.

Luo, D. (2009). Research on the urban pre-warning management system against the meteorological disasters in hunan province. *A Thesis of Master of Public Administration, National University of Defense Technology*.

Muller, J., & Young, M. (2014). Disciplines, skills and the university. *Higher Education, 67*(2), 127–140.

Noy, C. (2008). Sampling knowledge: The hermeneutics of snowball sampling in qualitative research. *International Journal of Social Research Methodology, 11*(4), 327–344.

Petak, W. J. (1985). Emergency management: A challenge for public administration. *Public Administration Review*, *45*, 3–7.

Phahlane, M. M., & Kekwaletswe, R. M. (2014). Management information systems use in higher education environments. *Proceedings of the Southern Association for Information Systems Conference*, *2*, 1–6.

Rizvi, S. (2020). Faith schools, tolerance and diversity. Exploring the influence of education on students' attitudes of tolerance. *Compare: A Journal of Comparative and International Education*, *50*(1), 148–150.

Schneider, S. K. (1998). Reinventing public administration: A case study of the Federal Emergency Management Agency. *Public Administration Quarterly*, 35–57.

Setiawan, W. A. (2018). Differences of Education Systems in Developed and Developing Countries Curriculum, Educators and Financing in Indonesia and Finland. *Didaktika Religia*, *6*(1), 139–152.

So, T., & Swatman, P.M.C. (2006). e-Learning readiness of Hong Kong teachers. Hong Kong IT in Education Conference 2006 "Capacity Building for Learning through IT" (HKITEC2006), February 6–8, 2006, Hong Kong Exhibition and Convention Centre, Hong Kong.

Shraim, K., & Khlaif, Z. (2010). *Information Technology for Development An e-learning approach to secondary education in Palestine : opportunities and challenges*. *1102*.

Sinclair, M. (2001). Education in emergencies. *Learning for a Future: Refugee Education in Developing Countries*, 1–84.

Stella, A., & Gnanam, A. (2004). Quality assurance in distance education: The challenges to be addressed. *Higher education*, *47*(2), 143-160.

Straub, E. T. (2009). Understanding technology adoption: Theory and future directions for informal learning. *Review of Educational Research*, *79*(2), 625–649.

Sylves, R. T. (1994). *Ferment at FEMA: Reforming emergency management*. JSTOR.

Tarhini, A., Al-Busaidi, K. A., Mohammed, A. B., & Maqableh, M. (2017). Factors influencing students' adoption of e-learning: a structural equation modeling approach. *Journal of International Education in Business*.

Thowfeek, M., & Hussin, H. (2008). Instructors' perspective on e-learning adoption in Sri Lanka: A preliminary investigation. Communications of the IBIMA, 6, 124–129.

UUK (2019). Higher education institutions (2018–19), available at https://www.universitiesuk.ac.uk/facts-and-stats/Pages/higher-education-data.aspx

(accessed on April 13, 2020).

Wang, K., & Pan, Z. (2005). *Technologies for Meteorological Disaster Monitoring and Pre-warning and Disaster Reduction and Evaluation*. China Meteorological Press, Beijing.

Watkins, R., Leigh, D., & Triner, D. (2004). Assessing readiness for e-learning. Performance Improvement. Quarterly, 17(4), 66–79.

Zhang, G. (2010). *The Method of Meteorological Disaster Risk Assessment and Regionalization*. China Meteorological Press, Beijing.

Zimmerman, R. (1985). The relationship of emergency management to governmental policies on man-made technological disasters. *Public Administration Review*, *45,* 29–39.

Zlatanova, S., & Holweg, D. (2004). 3D Geo-information in emergency response: a framework. *Proceedings of the 4th International Symposium on Mobile Mapping Technology (MMT'2004), March*, 29–31.