Investigation The Requirements For Implementing Digital Platforms During Emergencies From The Point Of View Of Faculty Members: Qualitative Research

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Abstract

Covid-19 pandemic is the largest emergency that educational institutions faced in modern history and led to radical changes in the educational structure. Digital platforms are the basic environment for education and learning during the crisis and monitoring the requirements for their implementation paves the way for the development of clear rules and systems to implement digital platforms in the event of any emergency. The current research aimed at investigating the requirements for implementing digital platforms during emergency from the point of view of faculty members. To achieve the research goal, the qualitative approach was used to reach a deeper understanding of how the faculty members use digital platforms during Covid-19 pandemic and determine the requirements for implementing these platforms. Twelve faculty members from three universities, namely King Abdulaziz University, Umm Al-Qura University and Jeddah University, Saudi Arabia, participated. Participants were chosen according to the rates of participation and time used in digital platforms. Semi-organized in-depth interviews that were implemented electronically and then discharged and analyzed through the MAXQDD program were relied upon. The research results have shown that the basic requirements for implementing digital platforms during emergency were based on four basic requirements: technical, human, governance, and content requirements. The research recommended a need to work on finding a clear plan to activate digital platforms during emergency based on the requirements that were identified with the current research outcomes.

Keywords: digital platform, emergency, Covid-19 pandemic, faculty staff.

Introduction

The United Nations has acknowledged that educational emergencies are all cases that disrupt the right to education or deprivation of it, whether it is man-made or from natural disasters [1]. Educational emergency requires the closure of all educational institutions due to the unsafe conditions with which it is difficult to continue education by regular methods [2]. It can be said that the Covid-19 pandemic is the largest emergency in history that caused the disturbance of educational process and interruption of all its practices by regular methods [3]. This pandemic affected the educational status of 94% of the world's students

[4]. Responding to this Covid-19 pandemic requires people to rely heavily on digital platforms to maintain the continuity of the learning process [5]. It was prevailingly believed that there was no educational intervention that could replaces traditional education. However, after Covid-19 pandemic, the case has changed and an educational transformation from regular face-to-face education to e-learning through digital platforms became a reality to allow the educational process to be sustained [6]. Thus, Covid-19 pandemic has raised the importance of digital platforms to a new level that strengthened its position as a model to face emergency [7, 8]. Despite the sudden, unplanned

transition to provide education via digital platforms during the pandemic, learning across platforms will continue and become a future strategic option even after the disappearance of the pandemic [9]. The digital platforms during the Covid-19 pandemic are the main mediator for the department of teaching and learning operations, and with different types and tools of these platforms, it is important to search for all required tools that guarantee proper implementation so that it can be effectively relied on during and after the pandemic ([10]. In addition, the search in the requirements that enhance the sustainability of the use of digital platforms after the pandemic is one of the priorities that studies and research must work on [11], especially that digital platforms are one of the most important educational systems that can be relied upon in the face of emergency situations, bearing in mind that this type of platform can manage the educational process, maintain their continuity, and raise motivation rates for students in order to complete the learning tasks [12]. The sudden shift towards entirely implementing digital learning during Covid-19 pandemic has caused great confusion to all elements of the educational system [13]. With this confusion, it was necessary to work and investigate the requirements for implementing digital platforms during the pandemic. It is also necessary to work directly with faculty members when identifying their vision regarding the implementation of digital platforms, especially because the use of digital platforms in the context of Covid-19 pandemic is a preliminary introduction to the continuation of the use of digital platforms after the pandemic. Accordingly, the research gap on which the current research has been based is an attempt to compensate for the shortage in studies that were concerned with studying the requirements for implementing digital platforms during the pandemic in the kingdom of Saudi Arabia in higher education. This study outcomes can be therefore relied upon as a basis that can ensure the continuity of the use of platforms after the pandemic in addition to proposing a proposed plan related to the requirements for implementing digital platforms during emergency. Accordingly, the current research is based on the use of the qualitative approach for the purpose of deep understanding of the requirements for implementing digital platforms in the educational process during emergency, based on the nature of the use of digital platforms in the largest emergency educational situation witnessed by humanity; Covid-19 pandemic.

Conceptual framework

Digital platforms are defined as educational networks that represent a means of education and learning for both teachers and learners and provide an interactive environment and a set of technologies that efficiently support the learning process without the restrictions of time and space [14]. It consists of a set of tools that support learning events and occasions such as the discussions panel, individual and group conversations, file sharing and tasks, in addition to the ability to conduct tests and evaluations for the study course [15], and to enable learners to manage their educational activities and content [16]. Digital platforms are based on three basic characteristics: First, they are a digital environment that includes interactive interfaces for teachers and learners; second, providing content and evaluations in a digital manner; and third, they include special tools for the management of classroom activities [14]. For the digital platforms to become strong, they must be able to do the following: Using self-service and self-guided services, and the ability to collect educational content and then presenting it smoothly, and to be developed, as well as having the personal character of the content, and its ability to reinforce the content [17]. In this context, it can be said that the current platforms and current learning management systems are effective in organizing and empowering e-learning [18]. Digital platforms are characterized by many advantages, including acquiring knowledge at a time that suits the learner pace and the ability to view the lecture more than once in addition to the ability to use different types of educational materials and multimedia and divide the content into parts[19]. Platforms help increase the effectiveness of learning and individualization for learners who have different educational needs and preferences, as they are distinguished by providing a variety of learning tools that help in increasing the effectiveness of courses [20]. It also helps

faculty and teachers in using different types of calendar tools [21]. In addition, digital platforms enhance interaction and learning with peers [22]. Because Covid-19 pandemic contributed to creating new practices related to the use of educational platforms, it has become important to research these practices and determine their requirements; new practices during the pandemic will be a new future for technology implementation in education [23-26]. In addition, the most important characteristic of the unique learning experience in the Covid-19 era is an attempt to develop digital platforms and regular practices to create a new educational situation that guarantees the continuity of learning paired with high rates of interaction during emergency [27].

Theoretical framework

Implementation of digital platforms in education is based on several theories, including the Connectivism Theory, which discusses learning as a network of personal knowledge that is created to engage learners in socialization and online interaction [28, 29]. The theory considers that the concept of the learning process consists of several nodes linked by connections, where the nodes represent information on the Internet, whether text, audio or visual information, and the links represent the learning process itself, which is the effort to link these nodes with each other to form a network of personal knowledge [30-32]. The learning environment via digital platforms according to the communicative theory is largely based on the design of learning, since the design of distance learning environments in the communicative theory is not just courses or programs, but rather an environment that is based on specific characteristics that encourage the learner to continuous learning, communication, and engagement in learning and active participation [33]. Constructivism Theory is one of the theories that support the structure of education across digital platforms. The constructivist theory initiates from the idea that learning is an active constructive process rather than a process of acquiring knowledge. The theory also emphasizes that the learner is the focus of the learning processes; he interacts with his peers to build his knowledge and experience, and to understand the world around

him by thinking about everything he is involved in [34-36]. The constructivist theory means the use of digital systems for distance learning to build knowledge through the learner's actual personal experiences, his previous experiences, and his interpretations of the outside world [37, 38]. The digital structure of education systems provides active, collaborative, self-directed and equitable participation among learners, as well as knowledge building by supporting participatory learning through discussion and social dialogue and the exchange of multiple and different viewpoints, as the focus is on building knowledge rather than transferring it [39]. Social Learning Theory proposes that learning occurs through participation with others, and that the learners' interaction with more knowledgeable and capable peers affects their thinking and interpretations of different situations. Thus, social learning theory is a basis for understanding the way digital platform systems can be used by teachers, experts, and peers to provide continuous educational support and assistance. The learner can gain knowledge if he is helped to build the structure in which he places new information [32, 40]. Digital platforms are a fertile environment for applying the essentials and principles of social learning theory. Distance learning, in its current structure, occurs through participation and social interaction of the learner with his peers and teachers. Learning is a social by-product of conversation and negotiation among learners who acquire knowledge through participation in related social activities [41]. Digital platform systems provide tools that facilitate the process of social interaction, such as discussion forums that provide the opportunity for learners to discuss and interact with each other and share different resources and sources [42].

Methodology

This study aims at answering the main question "What are the faculty members' perceptions regarding the requirements for implementing digital platforms during emergencies?" It relied on the phenomenological approach to reach an accurate understanding of the requirements' nature that must be met to implement digital platforms during the pandemic through conducting thematic analysis of the outcomes of semi-structured

interviews that were carried out with the study participants- faculty staff [43]. Participants in the study are faculty members in the Makkah region of Saudi Arabia who were selected from three major universities: King Abdulaziz University, Umm Al-Qura University, and University of Jeddah. Participating faculty members were those who responded to an initial survey regarding their use of digital platforms during the COVID-19 crisis. These chosen faculty members were heavily using digital platforms at the beginning of the pandemic, and who provided at least ten teaching hours per week via the direct line, and were also chosen according to their prior experiences in using digital platforms before the pandemic. This is because they have the prior experience to use digital platforms during the pandemic, and accordingly twelve faculty members were chosen, with four members from each university, and one member from each of the following majors: medical, engineering, computer, and humanities to represent all sectors. The representation of the participants in the research can be shown in the following table. Based on the results of the initial use that examined teachers' use of digital platforms during the COVID-19 crisis, and based on teachers' expression of interest to participate in the study, twelve teachers were chosen from the teachers surveyed. These teachers were specifically chosen for a few reasons, including that they used more than one digital platform, and used of a variety of tools within each platform, and had extensive use of digital platforms during the Covid-19 pandemic. They also had prior experiences in using digital platforms in education, and that all their schools have advanced experiences in e-learning.   In addition, they were chosen according to a strategy that ensures their representation of all public, private, and international schools in the preparatory and secondary stages, as shown in Table (1).

Table 1. Distribution of participating faculty member according to the specialist

Major	King Abdulaziz University	Um-AlQura University	University of Jeddah	Total
Medical	1	1	1	3
Engineering	1	1	1	3
Computing	1	1	1	3
Humanities	1	1	1	3
Total	4	4	4	12

After granting an approval from the three universities, individual interviews were conducted with twelve faculty members using the blackboard classroom ultra-system because it is the approved system for conducting remote meetings at the university, and because it was used due to the difficulty in conducting face-to-face interviews during quarantine. The system is characterized by an automatic visual recording of the entire meetings, with the option to reload again. Interviews with faculty members were conducted in Arabic over a period of four days, and on each day, three faculty members, and one from each of the participated universities and of the same major were interviewed. Each interview has approximately taken thirty minutes. All interviews were transcribed and viewed to other participating members as per the language in which the interview was conducted, to achieve a relatively higher level of accuracy and consensus [44].

The data was generated through four motivational questions, namely:

1.   How could you do the same face-to-face classroom tasks via digital learning platforms?

2.   How did you overcome the challenges arising from fully managing all teaching and learning processes through digital platforms?

3.   How has the university been able to meet the requirements of learning via digital platforms during the COVID-19 pandemic?

4.   How can the positive practices that were used within digital platforms during the COVID-19 pandemic be extended after the end of the crisis.

Results

To answer the research question, the researcher conducted an in-depth semi-structured interview to

delve into and identify what faculty members need from digital platforms during the Covid-19 pandemic. However, the most important elements mentioned in the interviews were coded, and then grouped into homogeneous groups, and converted into main topics, as in figure 1.
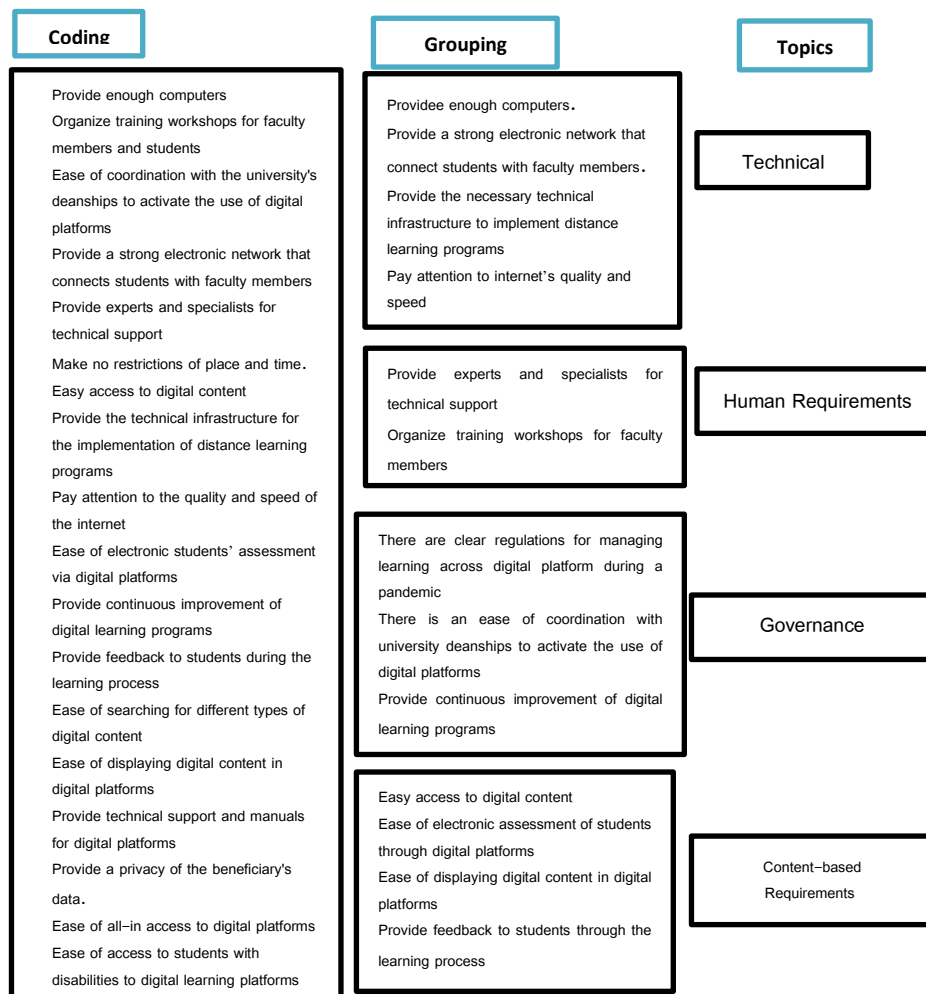
Coding

Provide enough computers
Organize training workshops for faculty members and students
Ease of coordination with the university's deanships to activate the use of digital platforms
Provide a strong electronic network that connects students with faculty members
Provide experts and specialists for technical support
Make no restrictions of place and time.
Easy access to digital content
Provide the technical infrastructure for the implementation of distance learning programs
Pay attention to the quality and speed of the internet
Ease of electronic students' assessment via digital platforms
Provide continuous improvement of digital learning programs
Provide feedback to students during the learning process
Ease of searching for different types of digital content
Ease of displaying digital content in digital platforms
Provide technical support and manuals for digital platforms
Provide a privacy of the beneficiary's data.
Ease of all-in access to digital platforms
Ease of access to students with disabilities to digital learning platforms

Grouping

Providee enough computers.
Provide a strong electronic network that connect students with faculty members.
Provide the necessary technical infrastructure to implement distance learning programs
Pay attention to internet's quality and speed

Provide experts and specialists for technical support
Organize training workshops for faculty members

There are clear regulations for managing learning across digital platform during a pandemic
There is an ease of coordination with university deanships to activate the use of digital platforms
Provide continuous improvement of digital learning programs

Easy access to digital content
Ease of electronic assessment of students through digital platforms
Ease of displaying digital content in digital platforms
Provide feedback to students through the learning process

Topics

Technical

Human Requirements

Governance

Content-based Requirements

Figure 1. Matrix of coding qualitative data and extracting effects

Discussion

According to the semi-in-depth interviews carried out by the researcher with faculty members at the three universities regarding determining the requirements for implementing digital platforms during the pandemic, the basic requirements for implementing digital platforms during emergencies were based on four requirements, which are: technical requirements, human requirements, governance requirements, and content-specific requirements; these requirements can be clarified through what have been mentioned by participants in the semi-in-depth interviews. With reference to the basic requirements for implementing digital platforms during the pandemic, one of the participants has stated: "Despite the many advantages of using digital platforms and their importance in learning, there are many challenges and obstacles that have arisen when using them in the educational process, including the need to provide some technical, organizational and human requirements for displaying educational content" (A1). As revealed previously, required implementations were based on the need for an infrastructure related to the use of digital platforms and regulations associated with their use, as well as individuals capable of managing e-learning during an emergency or pandemic. There is also a need to issues related to educational content which is the main element in

the learning process with digital platforms. Covid-19 pandemic has changed the entire educational context because all teaching and learning processes are implemented via digital platform systems, with a new structure for intensive use, and an entire absence for regular face-to-face learning imposed after a state of total closure of regular educational institutions who were obliged to rely only on technology in educational access processes [45]. Accordingly, learning via digital platforms in the context of the Covid-19 pandemic has represented a new phenomenon because it requires new practices and qualitative procedures that did not exist in before. Student and teachers have also been obliged to deal with technical elements from a new perspective, which requires thinking and analysis to explore opportunities, constraints and requirements arising from learning via digital platforms during the pandemic, However, upon all of this we cab built up on future planning for learning during emergencies [46]. In the context of technical requirements, participants stated the following:

"Among the technical requirements that must be met when activating the use of digital platforms, especially considering the Covid-19 pandemic, there is the technical infrastructure which is necessary to implement distance learning programs (A8). The necessity of providing enough computers, and the continuous maintenance of these devices (A9). The necessity of working hard to provide a strong electronic network that connect students and faculty members and pay attention to the quality and speed of the Internet" (A10)". The Covid-19 pandemic has raised the importance of distance education to a new level [7]. This level calls for a reassessment of the technologies on which the structure of digital platforms is built, as not all digital systems can be equal in achieving the desired positive effects; The quality of these systems and their general structure contribute greatly to determining their effectiveness [47]. This is because the structure of digital systems and the tools they provide can determine their role in addressing specific issues in the context of distance education in a way that makes this context more influential.

In the context of human requirements, one participant stated:

"The necessity of organizing training workshops for faculty members and students and providing experts and specialists for technical support" (A4). The previous result is consistent with what was agreed upon in the Virtual Learning Leadership Alliance (VLLA), Quality Matters (QM), and Digital Learning Collaborative (DLC), with regards to the most important normative policies for distance education programs that it is the need for a digital platform-based learning system to have appropriate levels of qualified and well-trained personnel who are supported with the necessary resources to achieve personal and organizational goals [48]. Undoubtedly, the roles of a faculty member in distance education differ from his roles in normal learning environments. The teacher in the distance education system is a guide and facilitator rather than an explainer or transmitter of knowledge. In addition, the teacher in distance education is responsible for developing attractive learning environments based on active learning and for promoting continuous interactions between him as a teacher and students and among students as well. The teacher also works to integrate technology through mechanisms that enhance opportunities to obtain the best learning experience, and enhance access to learning resources [49, 50]. Before considering the roles of a faculty member in distance education environments, the issue of professional development for a faculty member is one of the important policies that must be planned within the education structure during emergencies. If the trend is towards investment in technology and the provision of technical tools, this investment will not succeed without training the teacher, as he is responsible for activating and managing technology-based teaching and learning processes, and accordingly, it is necessary to provide regular access to various professional learning opportunities, provided that the provision of opportunities is based on the needs and realities of faculty members, and this coincides with the development of motivational structures to enhance teachers' participation in professional development processes, and in providing support and assistance to teachers in applying new knowledge and skills [51].

In the context of governance requirements, participants stated the following:

"Digital platforms have helped faculty members during the pandemic to implement distance learning programs, but among the regulatory requirements is the need to provide all-in access to digital learning platforms, and to a privacy of beneficiary data" (A11).

"The need to coordinate with the university's deanships to activate the use of digital platforms and achieve the desired goals" (A7).

"It is important to have clear regulations and rules that define the mechanisms for using digital platforms during emergencies" (A12).

Any distance learning program must be based on clear governance with transparent roles and responsibilities designed to ensure long-term success and sustainability in a manner consistent with the mission, vision, and strategic objectives of the institution. Governance should also operate within the framework of clear and explicit regulations and work on a precise clarification of the specific roles of all staff and departments included in the structure of the distance education system [48]. The importance of governance in distance education programs is that it is an effective tool for the smooth operation and effective management of distance education programs, and works to enhance the efficiency, effectiveness, and general performance of institutional management, which is necessary for the continuous development of distance education programs. It can be said that governance is the organizational framework that increases access to distance education programs in an organized manner [52].

In the context of the content requirements, the participants stated the following:

"Learning through the use of digital platforms helped present educational content in interesting, innovative, and unique ways that are different from the traditional system which prevailed previously in education, but this requires easy access to digital content" (A2).

"One of the most important requirements for implementing digital platforms, which is related to digital content, is that these platforms are characterized by the ease of electronic assessment of students and providing them with feedback while learning" (A5).

" The need for digital platforms to be flexible in the presentation of digital content and the ease of searching for different types of digital content" (A6).

"Interactivity that is based on the implementation of digital platforms gives freedom of movement through parts of the content, allowing the opportunity to deal with interactive content through the means that connect the learners to each other and between them and to their he teacher, and this requires providing all requirements for digital content" (A3).

"Due to the radical transformations brought about by the Covid-19 pandemic and the transition to distance learning, it is necessary to facilitate all tools that enable people with disabilities to learn through digital platforms" (A12).

This comes in line with the content standards of distance education courses, which are based on the need to provide various content options that enhance students' mastery of content, provided that these options comply with governmental or national content standards. Additionally, course content and other supporting materials must reflect a culturally diverse perspective that is bias-free. The copyright and license status of any third-party content must be appropriately cited and easily found [53]. Learning opportunities must be sequential in a way that promotes knowledge acquisition efficiently and in proportion to the assumptions of previous knowledge, and different methods should be followed in the processes of content succession, including linear, spiral, and learning scaffolding, and the design must include the most appropriate strategies for the content. It is also necessary that the educational contents contribute to the achievement of learning objectives, and the educational materials must be integrated into the context of each educational lesson. Course content should also be appropriate to the reading level of the targeted students, and the educational materials must have sufficient breadth and depth to cover the aspects of learning. All educational materials used should be mentioned and explained appropriately, and that these materials are bias-free.

Conclusion

The current research is one of the important research projects that focused on determining the requirements for implementing digital platforms during emergency situations based on the experience of using platforms during the Covid-19 pandemic, which is the largest educational emergency that humanity has witnessed in the modern era. The current research succeeded in identifying the basic themes of the requirements for the use of digital platforms during emergencies. These requirements were based on four basic themes: technical requirements, human requirements, requirements related to governance rules, and requirements related to content, where these all are the most important themes from the point of view of faculty staff members working in higher education institutions. Thus, the requirements reached by the current research, based on the experience of Saudi universities in using digital platforms during the Covid-19 pandemic, can be built upon in developing basic rules for implementing digital platforms in the event of any emergency. In future papers, the challenges of learning via digital platforms during emergencies can be discussed from the point of view of students and faculty staff members in higher education institutions. The differences between the views of both students and faculty members regarding the use of digital platforms during emergencies can also be examined in the context of activity theory.

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