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A Proposed Model For Employing Digital Platforms In Developing The Motivation For Achievement Among Students Of Higher Education During Emergencies

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Abstract

The emerging new context of learning during the emergency imposed by the COVID-19 pandemic has prompted the necessity to consider how digital platforms can be used to enhance the motivation for achievement for higher education students and help them proceed with their educational journey. Enhancing students' abilities related to motivation to achieve has become one of the most important requirements for continuing learning within the context of an emergency. In addition, relying on a single, stable digital platform for all course content may not be appropriate for the nature of the curriculum. Accordingly, the current research has been suggested to develop a proposed model for employing a variety of digital platforms in one educational template to enhance the motivation for academic achievement among higher education students. The quasi-experimental approach has been used to compare the two research groups; the first group is the experimental group that used the proposed model for digital platforms, while the control group used the regular platform that is used at the University of Jeddah, Saudi Arabia during emergencies. The research sample consisted of sixty preparatory year students at the IT skills course. The research sample was randomly distributed into two groups. A measure of motivation to achieve has been prepared with regards to the nature of the course unit content. The scale included six themes: a sense of responsibility, perseverance, level of ambition, appreciation of the importance of time, enjoyment of learning practices, and planning for future. Each theme consists of four indicators, with a total of twenty-four indicators. The results have shown the preference and effectiveness of the proposed model for employing platforms in developing the motivation for achievement, as the model gave faculty members and students great flexibility in using qualitative tools that enhanced students' motivation.

Keywords: digital platforms, motivation for academic achievement, educational emergency.

Introduction

Learning during emergencies requires implementing different paths to deliver educational content and deliver normal educational practices somewhat differently. Educational institutions are closed in emergencies, and shifting towards digital resources and platforms is the best path to meet the challenges arising from learning during emergencies [1]. To ensure the continuity of the educational process during the total closure of educational institutions, relying on digital platforms is the best option [2]. COVID-19 pandemic has changed the entire educational context, as all teaching and learning processes are delivered through digital resources, with a new environment of intensive use, which coincide with disappearance of face-to-face learning due to a total closure of educational institutions [3]. In the context of Covid-19 pandemic, which is one of the most important models of learning during emergencies, higher education institutions in the Kingdom of Saudi Arabia have turned to use the

Blackboard learning management system as the only official platform to manage all teaching and learning processes during the pandemic. However, because a single platform or system administration may not be enough to handle teaching all courses, it is important that educational institutions get equipped with various alternatives and resources that could enhance in providing educational content to students. COVID-19 pandemic as a new context for education requires research in a variety of digital platforms that can be based upon as a multi-alternative system to support the educational process [4]. Digital platforms during Covid-19 pandemic are the main mediator for managing teaching and learning processes, but with the onset of different types of these platforms and tools, it is important to research the optimal model through which these platforms can be employed [5]. In addition, researching the most important elements and factors that maintain students' motivation and ensure their continuity of enthusiasm in the learning process via digital platforms during Covid-19 pandemic is an important matter that should be considered a major criterion when using any platform in the educational process [6]. In addition to the above, the existence of various digital platforms during emergencies is one of the vital matters that must be addressed to confront all the challenges that arise from the nature of this emergency. The real problem lies in the optimal model that should be used to employ these digital platforms during emergencies. There are educational courses of a theoretical nature that may require employing specific platforms that do not fit the same courses of a practical nature. In addition, some courses may require qualitative tools to implement their activities and strategies**.** This is what prompted the research team to carry out the current research which aims to develop an analytical model for setting standard specifications for each of the digital platforms that can be relied on for learning during emergencies. Standard specifications must also be set as compatible with the nature of the educational contents provided through these platforms so that through this digital databases-based model, it becomes possible to filter the appropriate content for the appropriate platform according to a set of double standards for each of the educational content and the activities, strategies, and evaluation methods it includes. The characteristic of the platform is also to be taken into consideration in this context. Then distance learning processes should be activated according to the outputs of the model, which will provide a full description of the appropriate tools, how to activate them in providing specific content**,** mechanisms for implementing educational activities and strategies mechanisms for implementing evaluation practices, strategies to implement student motivation practices, and other specifications used by the model. Based on the foregoing, the problem of the current research is based on how to develop a proposed model for employing digital platforms in distance learning during emergencies, and then to identify its effectiveness in developing the motivation for achievement among the students at the university of Jeddah.

However, this research attempts to answer the following questions**:**

(RQ1) What is the proposed model for employing digital platforms during emergencies in developing the motivation for achievement among higher education students?

(RQ2) How effective is the proposed model for employing digital platforms during emergencies in developing the motivation for academic achievement among higher education students?

The current research also attempts to validate the following hypothesis**:**

(H1) There is no statistically significant difference at the level (0.05) between the average scores of the experimental group s members who used the proposed model to employ the platforms, and the average scores of the control group members who used the regular platform defaulted by the university during the pandemic in the post-measurement of the academic motivation scale; that is because of the effect of the proposed model.

Literature Review

Digital Platforms

Digital platforms are defined as educational networks that represent a means of teaching and learning for both teachers and learners and provide an interactive environment and a set of technologies that support the learning process efficiently without restrictions of time and space

[7]. It integrates a set of tools that support learning activities and events such as the discussion page, individual and group conversations, file sharing, assignments, and the ability to conduct exams and assessments for the course [8]. It enables learners to manage their own educational activities and content [9, 10]. These popular digital educational platforms include the Microsoft Teams platform, the Talent LMS platform, and the Edmodo platform (Alhalafawy & Zaki, 2022). The digital platforms are characterized by ease of use, access to various educational resources, their tools for interaction and cooperation, their ability to improve the communication process between the teacher and students with different options, like discussion forums, it is also through these digital platforms that students can submit tasks and assignments, track grades, and prepare reports and statistics on student achievement [7].In addition, one of the most important features of digital platforms is that they allow for acquisition of knowledge at a learner's convenience, and they provide a choice to rewatch any lecture more than once. Learners can also use different types of educational materials and multimedia and divide content into parts [11]. Platforms help increase learning effectiveness and personalize learning so to suit learners with different learning needs and preferences, they are also characterized by their abilities to provide a variety of learning tools that help increase the effectiveness of courses [12]. They also assist faculty members and teachers in using different types of assessment tools [13]. In addition, digital platforms enhance the processes of peer interaction and learning [14]. In a related context, the success of the learning process through digital platforms during emergencies should focus on basic educational elements: learner-centered design, social learning, cooperation among learners, and the proper planning for the whole learning process[15]. Teachers have a large and vital role in encouraging learners to use digital platforms by urging them to participate in discussion forums, share educational content across the platform, and take exams [16]. Digital platforms during emergencies should also enhance learners' self-organized learning skills so that they can continue to rely on digital platforms as an educational environment; it is because a large part of learners' satisfaction with learning in digital platforms is related to the ability of these platforms to support self-organized learning [17].The quality of e-learning and the self-efficacy of teachers are among the critical factors that make learners ready to continue educational practices via digital platforms [18, 19]. The learner's experience through the digital platform must be continuously improved through providing tools that continuously stimulate the motivation of learners, and other various support services to learners in a timely manner to maintain a positive learning behavior [20]. Among the challenges associated with the use of digital platforms during emergencies is the rapid rush to use digital platforms without appropriate educational planning, which may lead to relying on these platforms as mere temporary solutions without adhering to the proper educational principles of teaching and learning processes [21]. The rapid transition of digital platforms during emergencies also raises many concerns about privacy and self-monitoring and their impact on the life of the learner [22]. Therefore, educational institutions must set appropriate criteria to choose the best platforms that correspond to their educational needs to mitigate the potential negative effects that may arise during an emergency [23].

Motivation for academic achievement

Motivation for achievement is the readiness to perform difficult work, with the learner enjoying the learning process, looking forward to discovering everything new, and do love perseverance [24, 25]. Motivations play a fundamental role in directing the activities and practices carried out by the individual or group, especially in the educational field, and it is one of the important aspects in the general system of human motivations that is responsible for motivating educational human behavior, school achievement and academic achievement [26].The term motivation refers to the set of internal and external circumstances that move the individual in order to restore the imbalance that has been disturbed. Motivation in this concept refers to a tendency to reach a specific goal; a goal that may

exist to satisfy internal needs or desires [27]. An individual who is motivated to achieve is the individual who is willing to assume responsibility, strive for excellence to achieve certain goals, persevere to overcome obstacles and problems, feel the importance of time, and plan for future [28]. It must be emphasized that if motivation is a means to achieve educational goals, it is one of the most important factors that help acquire knowledge, understanding and other experiences [29].

After reviewing the literature that focused on motivation, the research team believe that it is possible to base motivation for academic achievement on the following themes [24, 25, 30-33]:

1. The spirit of responsibility: It means commitment and seriousness in performing tasks, applications and assigned academic duties, with more effort and attention to achieve this.
2. Perseverance: It means the ability of the learner to continue performing work, duties and deal with applications related to area of study, regardless of the surrounding problems, with the possibility of sacrificing some life matters.
3. The level of ambition: It means the effort made by the learner to obtain the highest academic grades, and the desire to review many learning resources, while constantly striving to improve performance, and accepting the challenge in accomplishing difficult educational tasks.
4. Estimating the importance of time: It means awareness and understanding by the learner of the value of time, and his keenness to complete his educational duties and assignments on the specified dates.
5. Enjoying learning practices: It means the learner's feeling of satisfaction and contentment with the learning practices and the duties and applications he performs during his studies without expecting any kind of incentive in return.
6. Planning for future: It means the learner's ability to anticipate the future, and plan well with regards to identifying the expected problems and working hard to prevent them occurring.

Theoretical Framework

The employment of digital platforms in learning situations depends on the principles of Motivations Theory, which indicates that the learner's impulse to participate in digital platforms is based on three main motives: first is intrinsic motives which are based on personal enjoyment; digital platform tools provide various processes for preserving and disseminating content via a technological umbrella that learners can access at any time without restrictions as well as showcasing their thoughts and contributions, which gives the learner a sense of personal enjoyment. As for the second motive, it is based on societal commitment. In this context, digital platforms give learners the opportunity to fulfil their commitments to the learning community associated with participatory building of content and sharing it with others, helping therefore to develop the capacities of members of learning communities. Finally, there are external motivations that focus on the learner's self-development and develop his skills and abilities. Undoubtedly, by providing the learner with an umbrella containing various media and files that can be used and interacted with in an individual or participatory framework and without any restriction associated with pre-setting the working environment, digital platforms help enhance the learner's self-development processes where learning media are always made available at hand [34, 35]. According to the Connectivism Theory, the learning environment through digital platforms is largely based on the design of learning, since the design of distance learning environments according to the communicative theory is not just courses or programs; rather, the environment is based on specific characteristics that encourage the learner to continuously learn, communicate, engage in learning and active participation [36]. This must be provided through the selective system on which the idea of the current research is based with regards to how to filter a specific platform according to characteristics that motivate the learner to continue the learning process. Constructivism Theory is one of the basic theories for designing teaching and learning processes across digital platforms. Learning through constructivism is a process that supports building knowledge rather than allowing for a contact with knowledge, and learning is a meaningful process that differs from one individual to another depending on the nature of the interaction that occurs between the individual and the learning

environment. Accordingly, the higher the interaction processes between the learner and the learning environment, the better the learning process becomes [37-40]. Therefore, the development of a model for learning through digital platforms during emergencies must consider the existence of standards that ensure the interaction of the learner with the learning environment through digital platforms, and thus achieve the highest rates of academic achievement.

Methods

1-Design

The researcher used the quasi-experimental approach based on the experimental design with two experimental groups, where the first experimental group used the proposed model through which more than one learning platform was nominated, while the control group used the blackboard platform, which is the only platform used officially in presenting the courses.

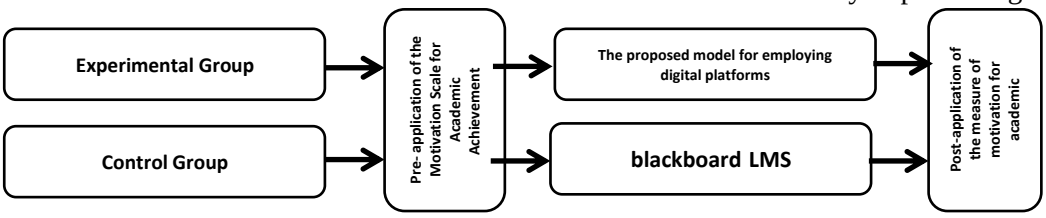

Figure 1: Experimental design of research processors

2-Sample

The current research sample consisted of sixty students from the preparatory year at the University of Jeddah who are studying the "Information Technology" course in the second semester of the academic year 2021/2022. Students who are fluent in using social platforms and have the desire to participate in the research experience were selected. Students' actual use of digital platforms and learning management systems was surveyed inside the university. Students were randomly assigned to the two experimental research groups, with thirty students for each group.

3-Measures

Motivation for academic achievement within this research is related to the indicators of motivation that occur as a result of learning through the proposed model of digital platforms, and to prepare the current research scale, a variety of motivation measures for learning have been reviewed [24, 25, 30-33]. in addition to the nature of learning via digital platforms during the pandemic, and the nature of higher education students under current research, the scale of motivation was developed through adaptive support applications. The scale included six main themes: spirit of responsibility, perseverance, level of ambition, appreciation of the importance of time, enjoyment of learning practices, planning for future, with four items for each theme; two themes are positive, and two are negative. The scale was presented to a group of arbitrators to ensure its validity and how appropriate the phrases for educational graduate students are. Students were asked to rate each item according to a quinquennial evaluation (strongly agree, agree, neutral, disagree, strongly disagree) and grades are given (from one to five respectively) for positive statements and vice versa for negative statements (items are coded based on a 5-point Likert type scale (from 1 = strongly disagree to 5 = strongly agree). The stability of the scale was confirmed in pre-application, as it reached Cronbach's coefficient (0.81) (Cronbach's α = 0.769).

4-Procedures

The content and tasks of the IT course were analyzed, and the main tasks that will be taught were based on three main tasks: cloud services applications, skills of using word editing software, skills of using Power Point presentations. Of these tasks, there are (32) sub-tasks. The content includes both theoretical and practical contents, which requires working to provide tools and platforms that support all types and strategies of content. The basic idea of designing the proposed model for employing educational platforms during

emergencies is based on providing a diverse number of platforms that a faculty member can choose from so that to offer a variety of platforms, from which a teacher can choose what might be compatible with the nature or content of the course or what might suit the goal aimed. Accordingly, two types of digital platforms were identified. The first type of platforms is integrative, which integrate educational management systems that rely on a variety of qualitative tools that provide educational content. Table (1) shows the models of these platforms and their most important characteristics. The second type of platforms are fully video-supportive platforms that can be relied upon to implement educational lessons that provide practical contents and table (2) shows the models of these platforms and an analysis of their most important characteristics.

Table 1. Characteristics of platforms with integrated educational management systems

Characteristics	blackboard	Microsoft teams	Edmodo	Talent. LMS	Google classroom	Classera	EDX
Free of charge	×	√	√	×	√	×	√
exams	√	√	√	√	√	√	√
library	√	√	√	√	×	√	√
forum	√	√	√	√	×	√	√
tasks	√	√	√	√	√	√	√
discussions	√	√	√	√	×	√	√
incentives	×	×	√	√	√	√	√
accessibility	√	√	√	√	√	√	√
interaction	√	√	√	√	√	√	√
archive	√	×	√	√	×	√	√

Table 2. Characteristics of video-based platforms and supportive of the main platforms

Characteristics	ZOOM	EDBUZZL	PLAYPOSIT	GOOGLE MEET	GO TO MEETING
Free of charge	×	√	√	√	√
exams	×	√	×	×	×
library	√	√	√	×	×
forum	√	×	√	×	√
tasks	√	×	×	√	√
discussions	√	×	√	×	√
incentives	×	√	√	×	×
accessibility	√	√	√	√	√
interaction	√	√	√	√	√
archive	×	×	×	×	×

Within the characteristics framework that have been identified for the platforms and in light of the nature of the content, which may be theoretical or practical, or include both, the structure of the proposed model has been designed as shown in the following figure:(2) in which the platforms were presented to a group of experts and four platforms were identified from each category to be included in the proposed model.

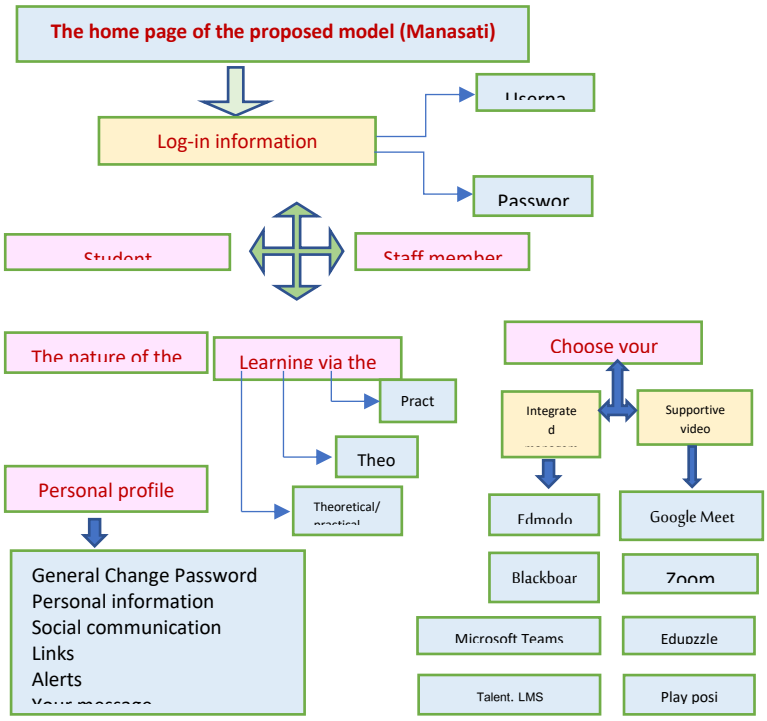

Figure 2. The proposed model for employing educational platforms during emergencies

With regards to the previous model, a digital platform across web has been designed with the name of 'Manasati', through which staff members can log in to discover the various platforms and their characteristics, how to use and how to employ throughout the teaching process, and this is shown below in figure (3):

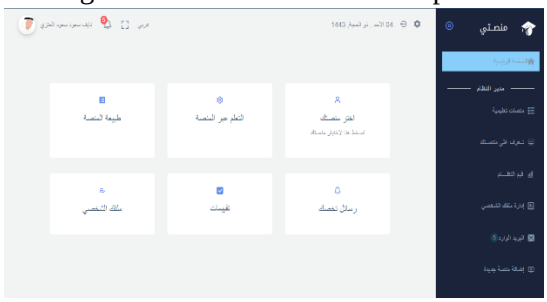

Figure 3. "Manasati" digital platform

The system provides multiple tools, as through the platform selection tab, a faculty member can enter and determine the nature of the content he is teaching – whether practical, theoretical or both. Then, appropriate platforms are suggested to initiate the learning process. The tab on platform learning also provides information on how each platform is used in the educational process. The tab for the nature of the platform provides information on the technical use of the platform and its most important tools. The model also provides information for evaluating the platform and managing users' profiles. It allows students to enter and learn basic information related to the use of the platforms. By making the system available to three faculty members teaching the IT course in the preparatory year at the University of Jeddah, and by entering content specifications, the talent LMS platform was nominated as an integrated management system, and the Edupzzle platform as a supportive video platform for teaching and managing the content of this course, which includes theoretical and practical contents. The talent LMS platform is suitable for digital motivation as it includes various motivational tools such as points, badges, levels, and leaderboards. The Edupzzle platform is also a suitable platform for managing videos because it allows

segmentation of the visual content, adding questions within videos, and activating s feature that do not allow a skip of a content until after being viewed by students with the questions all answered. The proposed model was used to train faculty members and students on the proposed platforms and to raise students' awareness towards all mechanics of using the platforms and sub-tools of each platform. The content was taught for three academic weeks in the first semester of the academic year 2021/2022. Table 3 shows the mechanism of work of the experimental groups and the control group during the implementation of the experiment.

Table 3. Action Plan for each of the experimental and control groups during the implementation of the experiment

Experiment Group	**Control Group**
A faculty member uses the proposed model for the platform in determining the specifications of the content to be taught. Platforms are nominated as per a faculty member's input. Based on the platforms that will be nominated, the faculty member begins to identify the components of each platform and the mechanisms for using them in the educational process. The faculty member uses the qualitative tools of the platforms in presenting the educational contents. In the current research experiment, talent LMS and Edupzzle platforms were nominated for providing information technology course content. The talent LMS platform is focused on carrying out educational tasks and motivating users through gamification elements, while Edupzzle has been used to provide digital videos related to skills content.	Students study all digital content and topics related to the Information Technology course through the Blackboard platform, which is the official platform of the University of Jeddah. All system tools are used to manage all teaching and learning processes. The interaction between students and faculty members takes place through the platform without relying on any additional platform.

Results

In results, we review the answer to the research question that verifies the effectiveness of the proposed model for employing digital platforms during emergencies in developing the motivation for academic achievement. The t-test was used to identify the significance of the differences between the experimental group and the control group. Table (4) shows the results of the t-test for the two research groups.

Table 4. Arithmetic mean, standard deviation, and "t" value for the total academic achievement motivation skills

group	N	Mean	SD	t	df	sig
G1- EXPERIMENTAL GROUP Proposed model for digital platform	30	135.67	4.171	9.25	58	0.000
G2- CONTROL GROUP Using regular platforms at the university	30	109.13	3.171			

Inducting data from table (4) demonstrates the preference of the experimental group that used the proposed model for digital platforms as compared to the control group in developing the motivation for academic achievement among the research sample students. The effect size is (0.59), which reflects a strong impact of the proposed model for digital platforms on the motivation for academic achievement. This means that the hypothesis of the research is incorrect because there are statistically

significant differences between the experimental and control groups in the motivation for academic achievement due to the strength of the effect of the proposed model. Figure (4) shows the comparison between the experimental and control groups in the average total score for the motivation for academic achievement.

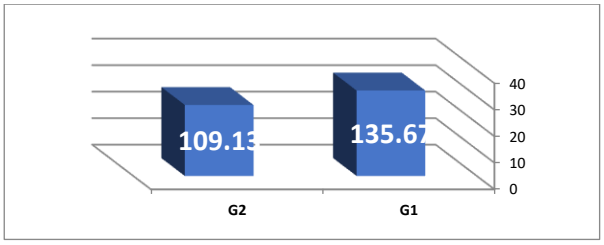

Figure 4. The difference between the experimental group and the control group in the academic achievement motivation scale

Discussion

This result, which indicated the effectiveness of the proposed model for employing digital platforms during emergencies in developing the motivation for academic achievement, may be attributed to the fact that the proposed model gave the teacher the ability to control the educational situation by adapting various tools to provide content and achieve the goals associated with enhancing achievement motivation. these educational situations have been made more flexible because platform tools are compatible with the characteristics of the content, which helped to make students actively in search of information, which led them to bear responsible for learning and thus reflected on their motivation for achievement.The reliance within the model on platforms that include motivational tools helped students to overcome the general situation associated with anxiety and stress from the pandemic, and the first goal of students was to obtain incentives, which enhanced their motivation for academic achievement. Motivations tend to raise students' cognitive growth rates, and enhancing their abilities of organizing their learning, which enhances motivation [41]. The stimuli also help to develop thinking, and find various ways to achieve the best learning, which is positively reflected on the students' motives [42]. In addition, stimuli contribute greatly to enhancing students' involvement in learning, thus focusing on, and planning all the requirements of the educational task and raising achievement rates [43, 44]. The current result is compatible with the Motivation Theory (MT) theory, which indicates in its content that incentives help create internal motives that motivate students [26]. In addition, this result was consistent with the constructivist theory that aims to create a kind of social interaction among learners and to constantly show the changes taking place in the learning community. This helps in creating upward motives for the learner, which was achieved through the flexible tools of the proposed model that relied on motivational platforms and platforms that use interactive video, through which their knowledge gaps were filled in a framework of individual and social interactions that considered their cognitive characteristics. According to the Self-Determination Theory (SDT), the student, regardless of his skills, does not work automatically; however, there must be stimuli that support the student towards continuing the learning process [45-47]. According to the Goal Setting Theory (GST), the student seeks to plan and manage goals in order to achieve his aspirations and desires, which is supported by digital incentives [48]. Basic Psychological Needs Theory (BPNT) refers to a set of factors that make any activity enjoyable and stimulate internal motivation, among these factors: autonomy, competence, and relatedness, which is provided by the proposed model; a model that provide various platforms that support independence by giving the learner a sense of will and freedom to carry out tasks. It also stimulates efficiency by giving the learner a sense of effectiveness in accomplishing tasks and influencing the environment in which he is located [46, 49-51].The motivation for academic achievement is one of the variables that requires attention and development because it is one of the main drivers of the learner within the educational environment. The greater the student's academic achievement motivation rates, the more positively this will be reflected on the learning outcomes, as indicated by some previous studies [52-54]. The higher the achievement motivation rates, the higher the academic achievement rates. In addition,

motivation in general is one of the basic learning conditions, and it drives and directs behavior, which means that the latest learning procedures and actions should focus on the existence of a motivating structure that helps develop the learner's achievement motivation as a condition of learning [24, 25]. It can be said that the proposed model enhanced the motivation for achievement because it used qualitative platforms and tools that made the learner more effective in achieving learning goals and relied heavily on motivational tools. The result of the current research is consistent with a few previous studies that explained the role of digital technologies in enhancing achievement motivation, such as the study of Jeno and other colleagues [55], which confirmed the effectiveness of mobile digital content applications in enhancing achievement motivation and the study of Turel and Ozer Sanal [56], which indicated the effectiveness of the motivational design of the e-book in developing the achievement motivation. It is also consistent with the study of Ibáñez and his research team [57], which demonstrated the effectiveness of augmented reality technology in developing achievement motivation. There are other compatible studies that indicated that motivational tools in digital platforms enhance enjoyment of learning [58] and good planning for learning [17, 59], which may lead to enhanced motivation for academic achievement.

Conclusion

The current research focused on the existence of a qualitative model for employing digital platforms during emergencies in enhancing motivation for academic achievement. The model relied on providing a variety of digital platforms that suit the nature of the academic content so that the learning process during emergencies is not restricted to one platform that may not be suitable for the nature of the academic content. The advantage of the proposed model in developing students' motivation for achievement was reached, as the model relied on flexible and motivational tools with the use of the talent LMS and Edupzzle platforms interchangeably, and their powerful tools for qualitatively providing academic content. The research team believes that future research related to the use of digital platforms in the educational process during emergencies could be directed towards developing a model for managing social networks and measuring their impact on some learning outcomes. Additionally, examining the impact of artificial intelligence techniques in managing educational contents according to the psychological characteristics of students during emergencies is one of the important issues that researchers can address.

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