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The Effect of Blended Learning on Crisis Management During the Corona Pandemic (COVID-19)

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Abstract :

This research endeavors to investigate the influence of blended learning on the effective management of the educational challenges posed by the COVID-19 pandemic within nine government and private colleges in Iraq, to assess the level of interest exhibited by these institutions in the principal research variables and their dimensions. Additionally, the research seeks to formulate a set of conclusions aimed at enhancing performance standards to ensure the attainment of quality outcomes. These conclusions are founded upon the novelty and pressing significance of these variables in sustaining the educational process.

The research methodology adopted for this research is primarily descriptive and analytical. The research population comprises teachers affiliated with departments specializing in administrative and economic sciences across the selected colleges, with a total sample size of 142 teachers. The principal research instrument employed is a questionnaire distributed to the aforementioned teachers. Furthermore, the research harnesses SPSS V.26 statistical software, for the analysis of the primary data. Both descriptive and inferential statistical techniques are utilized to assess and validate the research hypotheses. The statistical analysis reveals several noteworthy findings, most notably a substantial correlation and impact of blended learning across its dimensions (infrastructure suitability, teacher readiness, student readiness, and curriculum suitability) in the realm of crisis management, encompassing various dimensions (the detection of warning signals, preparedness and prevention, damage containment, activity restoration, and learning).

Paper Type: Research paper
Keywords: Blended learning, Crisis management, Corona pandemic.

1.Introduction:

Over the past decade, there has been a growing emphasis on the quality of education driven by advancements in science and technology, economic shifts, the expansion of educational institutions, and societal pressures placed on higher education establishments (Mohammed et al., 2019); (Mohammed et al., 2020). However, these institutions find themselves in need of effective tools, programs, and strategies to enhance their competitive positioning by improving the value of their educational offerings, enhancing efficiency and effectiveness, and adapting to ongoing environmental changes (Mohammed, 2022). In the contemporary landscape, organizations are constantly navigating swift environmental transformations, necessitating the acceleration of response times to meet customer demands (Mohammed et al, 2017). To address this, manual efforts alone are insufficient, and technology serves as a facilitator for augmenting business performance by simultaneously enhancing efficiency and effectiveness (Alhalboosi et al, 2021). Organizations, as open systems, strive to strike a balance between stability and coherence on one hand and flexibility and adaptability on the other to achieve higher levels of effectiveness and excellence. Consequently, within the dynamic current environment, organizations must transition from a profit-centric perspective to one centered around sustainability (Mohammed and Faisal, 2023).

The advent of the COVID-19 pandemic and its far-reaching consequences have impacted all sectors of the Iraqi economy since its onset in February 2020, with experts projecting continued repercussions in the years ahead across various sectors and professions. These consequences are distinct from previous crises (Zghair and Al-Temimi, 2022). As the pandemic unfolded and prompted a shift towards distance learning, reverting to traditional teaching methods was viewed as a step backward in the educational sphere. Therefore, it became imperative to consider the adoption of a blended learning approach, which combines the advantages of both distance and traditional learning. The cognitive outcomes of the broader education sector, and specifically higher education and scientific research in Iraq, were not immune to the pandemic's effects. Institutions of learning faced significant challenges in ensuring the continuity of education while adhering to physical distancing measures. Consequently, the government grappled with this legacy and sought to harness technological innovations in education, spanning from computer-based learning to internet-enabled learning, ultimately culminating in e-learning, an essential facet of distance education. Among the diverse forms of e-learning, blended learning garnered considerable attention, focusing on delivering flexible, interactive, and engaging learning experiences that create adaptable and resilient learning environments, particularly suited to times of crisis.

1.1 Literature Review:

There are many studies focused on blended learning, Mbonu (2018) investigated the comparative impact of blended and non-blended learning strategies on student achievement in basic science within the Onitsha Education Zone, Anambra State, Nigeria ,population of 2,479 students. The findings of the study indicated that the blended learning strategy proved to be more effective in enhancing student achievement when compared to the non-blended learning strategy, irrespective of sex. Consequently, the study recommended that basic science educators should consider adopting the blended learning approach to enhance student achievement, regardless of sex. Herliana (2020) discussed the challenges faced by lecturers in implementing blended learning within the Department of Physics Learning at Syiah Kuala University, employing a questionnaire comprising 30 statements. This investigation assessed nine indicators related to lecturers' readiness and skills in implementing blended learning during the COVID-19 era. The questionnaire was administered to 15 lecturers, revealing that 29.23% of lecturers were not adequately prepared to implement the blended learning approach due to limited internet and learning platform access, rendering them unaccustomed to such tools. Furthermore, 44% of lecturers exhibited insufficient proficiency in using learning platforms, with 46.16% encountering difficulties in altering the virtual class's general appearance and 46.15% facing

challenges in interacting through the learning platform. Furthermore, Al-Haroun and Abbas (2020) assessed the readiness of colleges of education to implement blended learning, as perceived by teachers. Employing a descriptive approach, the researchers administered a questionnaire to 125 teaching staff members across several Egyptian universities. The results indicated that significant obstacles existed in the faculties of education regarding the adoption of blended learning, with no statistically significant differences found based on sex or academic degree. However, variations were observed based on specialization, particularly favoring theoretical specialties. In addition, Ibrahim and Hasan (2021) focused on the relationship between Information and Communication Technology (ICT) and the quality of blended education. It examined four dimensions (physical devices, software, databases, and communication networks) and their connection to elements of blended education (the teacher, the student, the teaching process, curriculum). This research was conducted at the Technical College of Management in Baghdad, involving 80 teachers and 276 students. The findings revealed a significant correlation and influence between ICT and the quality of blended education elements.

Many studies focused on crisis management, Al Suwaidi (2015) pointed out the crisis management level among heads of scientific departments at the University of Wasit, as perceived by lecturers. The study found that crisis management at the university's scientific departments was at a good level, with no statistically significant differences based on specialization, service, or scientific title. Budousha (2017) demonstrated the role of leadership in managing crises within the organization and relied on the dimensions of detecting warning signals, preparation and prevention, containing damage, restoring activity, and learning, The study showed that successful leadership contributes an effective role in crisis management, Mohsen (2019) identified the level of crisis management of the deans of colleges at Al-Mustansiriya University from the point of view of the teachers. It adopted the descriptive analytical approach. The research sample amounted to 370 teachers. The study showed that the deans of the colleges of Al-Mustansiriya University enjoyed good levels of crisis management and decision-making. Al Madawi and Badawi (2021) estimated the level of crisis management and its relationship to psychological stress among academic leaders at King Khalid University during the COVID-19 pandemic. The study revealed an average degree of crisis management and psychological stress, with a reverse correlation between the two variables.

There are many studies linked between blended learning and crisis management, Bernawi (2020) linked learning that blended e-learning with traditional learning to achieve the greatest benefit in managing educational crises in light of Arab and international experiences. The study showed that this learning provides the opportunity for students and teachers to keep up with the latest developments in educational technologies, tools, software, and applications. Thus, they have the experience that enables them to respond to all the changes and crises that the educational field may witness in the contemporary time, and the most prominent challenges facing e-learning in crisis management are represented by the inability of some countries to provide the tools and techniques necessary to activate e-learning. Abu Sitta (2021) indicated that due to the crises affecting the education sector, university administration must undertake the process of integrating both electronic and traditional processes. Crisis management is the management of the future and the present. Crisis management aims to achieve a high, rapid, and effective response to the changing circumstances of the crisis, to avert its dangers before they occur, which indicates the close connection between crisis management and blended learning.

The problem of the research focused on determining the role of blended learning in crisis management during the COVID-19 pandemic, the emergence of the COVID-19 pandemic prompted a significant shift in the educational landscape, necessitating the development of an educational strategy by the Iraqi Ministry of Higher Education and Scientific Research, with blended education as a pivotal component. This strategy aimed to address the global emergency crisis and ensure educational continuity. Despite global interest in blended learning, local

implementation faced challenges due to its novelty., Therefore, we can formulate three questions from the problem of the research :

1.What are the concepts of blended learning with its dimensions and crisis management with its dimensions?

2.What are the level of blended learning application and the availability of crisis management in the investigated colleges?

3.What is the level of correlation and influence between the research variables (blended learning and crisis management) in the investigated colleges?

The objectives of the research are :

1.Clarifying the concept of blended learning, identifying its dimensions, and identifying the concept of crisis management and its dimensions.

2.Diagnosing the level of blended learning application and the availability of crisis management in the investigated colleges.

3.Determine the level of correlation and influence between the research variables (blended learning and crisis management) in the investigated colleges.

The importance of research highlights the urgent need to adopt a blended learning strategy as an alternative strategy in the university educational system in the event of future crises. This research is important because it is based on integrating technology into education and improving learning by integrating e-learning with traditional learning and avoiding the defects of the education process based on a single style. It is expected that this research will contribute to public and private colleges adopting better levels of performance in confronting crises.

2.Material and Methods:

The research deals with a detailed presentation including the research model, the chart research procedure, the research population and sample, the measurement tool, and statistical analysis methods, as follows:

2.1 The Research Model:

Based on the research problem and objectives, the research scheme has been identified in Figure 1 below, which is based on Al-Haroun and Abbas,(2020) and Al Suwaidi, (2015) studies.
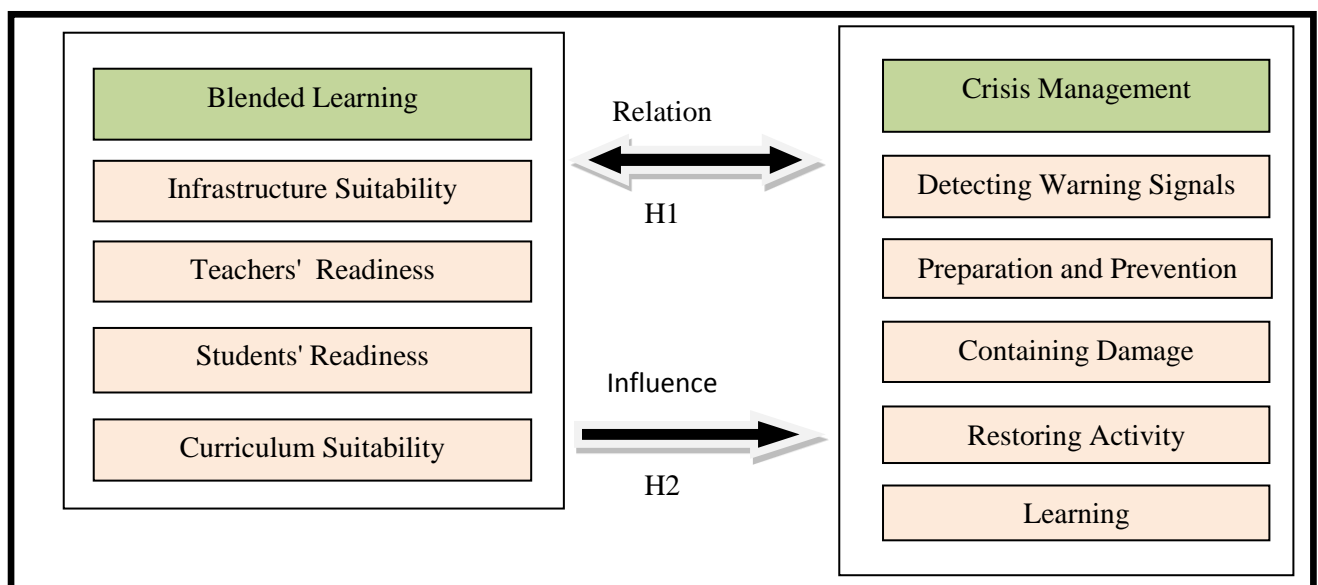

Figure 1: The Hypothetical Research Model

2.2 The research Hypotheses:

The researchers came up with the following two assumptions about the reality of understudy organization to find answers relevant to the questions posed in the research problem. The researchers adopted null hypotheses because this guarantees neutrality and objectivity. The research hypotheses are reflected in two groups that comprise correlation hypotheses and effect hypotheses between blended learning and crisis management.

H1**.** There is a significant correlation between blended learning and crisis management, and the following sub-hypotheses emerge from it:

1- There is a significant correlation between infrastructure suitability and crisis management
2- There is a significant correlation between teachers' readiness and crisis management
3- There is a significant correlation between students' readiness and crisis management
4- There is a significant correlation between curriculum suitability and crisis management

H2**.** There is a significant effect of blended learning on crisis management, and the following sub-hypotheses emerge from it:

1- There is a significant effect of infrastructure suitability on crisis management.
2- There is a significant effect of teachers' readiness on crisis management
3- There is a significant effect of students' readiness on crisis management
4- There is a significant effect of curriculum suitability on crisis management

2.3 Data Collection:

The quantitative research design was chosen to meet the research's objectives and questions. SPSS was used to examine the hypotheses research. According to a five-point Likert scale, the research instrument consists of two parts, and the first variable consists of several sub-dimensions. Table 1 shows an illustration of each variable and identifies the source of the measurement.

Table 1: The structure of the research-approved questionnaire

The Main Variables	Measurements
Blended Learning	(Al-Haroun and Abbas, 2020)
Crisis Management	(Al Suwaidi, 2015)

2.4 Statistical Analysis Methods :

To achieve the research's objectives and test its hypotheses, a variety of statistical methods were employed using the SPSS V.26 software such as, standard deviation, the arithmetic mean ,coefficients of correlation and simple regression, and
the Cranbach s' alpha scale

2.5 The research Population and Sample:

1.Research community: nine governmental and private colleges specializing in administrative and economic sciences. These colleges are : the colleges of administration and economics within the universities of Baghdad, Al-Mustansiriya, and Iraqi, as governmental universities and the private colleges of Al-Ma'moun, Al-Mansour, Degla, Al-Rafidain, Al-Farahidi, and Al-Turath .
2.Research sample: It consisted of 142 academic staff members. The most prominent characteristics of the researched sample can be identified by focusing on five main areas, and they can be clarified through Table 2 as follows:

Table 2: The Characteristics of the Research Sample

Properties		The frequently	%
Gender	Male	67	47.2
	Female	75	52.8
Total		142	%100
Age	Less than 30 years old	12	8.5
	30 to less than 40 years old	44	31
	41 to less than 50 years old	57	40.1
	51 to less than 60 years old	22	15.5
	60years and over	7	4.9
Total		142	%100
Educational Qualification	Diploma higher	1	0.7
	Master degree	88	62
	PhD	53	37.3
Total		142	%100
Years of Service	Less than 5 years	28	19.7
	6 to 10 years	23	16.2
	11 to 15 years	47	33.1
	16 to 20 years	28	19.7
	20years and over	16	11.3
Total		142	%100
Academic Rank	Assistant Lecturer	51	35.9
	Lecturer	62	43.7
	Assistant Professor	20	14.1
	Professor	9	6.3
Total		142	%100

It is clear from the above table that the ratio of males to females is closed. This indicates the importance of balance in the research community, according to competence and experience, regardless of gender. It was found through the age groups that the largest percentage is the intellectually mature, which was represented by the category (41-50) at a rate of 40.1 . This indicates that the research community relies on large age groups. Concerning educational qualifications, it is clear that the largest percentage are those who hold a master's degree, with a percentage of 62 , followed by a PhD, with a percentage of 37.3 which is the normal range in this kind of research community. According to years of experience. The categories of years of service are dispersed, and this indicates that the research community relies on a mix of young and experienced teachers. Finally, it was found through the academic rank groups. It is obvious that the category (Lecturer) is the most, followed by the category (Assistant Lecturer). This is a natural matter according to the organizational and administrative structure of the research community.

2.6 Blended Learning:
2.6.1The Concept of Blended Learning:
Blended learning represents an innovative educational paradigm that integrates both electronic and traditional teaching methodologies, as delineated by (Abdul Raouf, 2014). This pedagogical approach emphasizes the effective fusion of diverse instructional delivery styles, teaching models, and methods within an interactive and meaningful learning environments. In blended learning courses, multimedia elements, in-class activities, and digital resources are thoughtfully combined to optimize student learning outcomes (Mbonu ,2018). Blended or dual education, denotes the harmonious convergence of conventional and electronic educational tools (Albayatey et al, 2021). The design of a blended e-learning environment necessitates careful planning and meticulous execution to ensure its efficacy (Al-Muaither ,2018).

It is widely acknowledged that blended learning transcends the mere incorporation of technology into the educational process. Rather, it embodies a transformative educational approach that demands deliberate, thoughtful, and informed design, (Mackey et al, 2012). Its fundamental objective is the redesign of educational courses, pivoting from a teacher-centered to a learner-centered model, wherein students assume greater responsibility for their learning. This shift enhances students' capacity to engage with peers, instructors, and course content (Al-Sayed et al,2018).

In light of the foregoing, the researchers posit that blended learning represents the strategic deployment of technological and electronic methods within the constraints of physical distancing, as necessitated by contemporary learning contexts. This approach is undertaken to attain the educational objectives that institutions aspire to achieve within their unique operational parameters.

2.6.2Dimensions of Blended Learning:

Al-Haroun and Abbas (2020) have delineated four fundamental dimensions crucial for the implementation of blended learning in higher education institutions:

1. Infrastructure Suitability: The dimension of "Infrastructure Suitability" centers on the imperative of deploying technology in a manner congruent with educational content. This encompasses ensuring the presence of requisite computing resources, maintaining workshops to uphold performance standards, establishing communication infrastructure linked to the global information network, and providing an adequately fast internet connection. Additionally, it underscores the availability of electronic resources tailored to the educational course (Al-Haroun and Abbas, 2020). A study conducted by Sabeih and Al-Nabawi (2021) in the Egyptian higher education context underscores the significance of adapting the information technology infrastructure to facilitate the implementation of blended education. Notably, the Republic of Egypt grapples with a frail information and communications technology infrastructure, positioning it unfavorably in global technology infrastructure rankings. This deficiency is a salient factor contributing to the diminished efficiency and effectiveness observed in the utilization of blended learning during the COVID-19 pandemic outbreak.

2. Teachers' Readiness: Teachers' Readiness assumes paramount importance in the successful adoption of blended learning. This entails the preparation of teachers to embrace contemporary technologies, instilling a culture of blended learning within the academic community, and providing them with requisite training and knowledge about blended learning before its implementation. The quality of the educational process, encompassing both traditional and electronic learning, is intricately linked to the competence of teachers in navigating blended learning environments (Al-Haroun and Abbas, 2020). It is noteworthy that teachers may harbor apprehensions regarding the use of modern technologies, primarily due to their unfamiliarity and lack of experience with these novel tools (Raheemah et al, 2018). To address this, training and mentoring programs, including online learning and teaching courses, serve as invaluable mechanisms for equipping academic staff with the necessary competencies, and fostering their professional development (Mohammed et al. , 2019). Abu Rayya (2022) underscores the significance of a positive inclination toward technology-enhanced learning among educators, with a direct correlation observed between their receptiveness to learning technology and their disposition toward the blended learning environment. In a blended learning context, teachers are expected to possess certain essential skills, notably effective time management, data integration capabilities, the ability to elucidate the intricacies of blended learning, and proficiency in multitasking. Moreover, self-efficacy in utilizing technology assumes importance, reflecting an individual's confidence and comfort in utilizing technology for learning and communication in computer-mediated environments via the Internet.

Ibrahim and Hasan (2021) advocate for the continuous professional development of teachers as a means of enhancing their capacity for sound scientific and professional decision-making. Establishing ongoing training programs to revamp teaching staff members, bolster pedagogical methodologies, and encourage active participation in scientific research and conferences is imperative. In addition, the moral and ethical standards of teachers play a pivotal role, with the effectiveness of teaching staff members impacting the overall quality of educational service delivery, encompassing roles such as teaching, evaluation, guidance, authorship, translation, professional development, administrative duties, and community service.

3. Student Readiness: Students assume a central role in both traditional and blended learning paradigms, and their level of awareness and motivation significantly influences the attainment of desired objectives within the blended learning system, particularly during the period of the pandemic outbreak (Sabeeh and Al-Nabawi, 2021). It is imperative to equip students with the requisite knowledge and skills related to blended learning through preparatory courses before their engagement in such programs. Moreover, blended learning students are expected to possess certain fundamental competencies, including basic computer proficiency such as file management, folder creation, and internet search capabilities. Proficiency in tasks such as sending emails and utilizing office application software is also integral (Al-Haroun and Abbas, 2020).

Furthermore, fostering students' holistic development by enhancing their skills, motivation, and career progression is essential (Mohammed et al, 2018). Kintu and Zhu (2016) highlight that students' proficiency in computer applications can serve as a motivating factor for engaging with technology in education, whereas deficiencies in these skills can pose challenges in the educational process.

4. Curriculum suitability: The infusion of information and communication technology into the educational landscape necessitates a comprehensive reconfiguration of the curriculum to harmonize with this new technological paradigm (Ibrahim and Hasan, 2021). The preparation of an adaptable curriculum stands as a critical prerequisite for the successful implementation of blended learning within university settings, contingent upon the distinctive features of this pedagogical approach. This entails substantial modifications to the existing educational content, including the supplementation of traditional learning materials with technology-based resources. Importantly, the scope of the digital curriculum transcends the mere conveyance of information; it extends to encompass guidance and support for learners, particularly when instructors are not physically present, digital curriculum offer a multitude of advantages, most notably their capacity to cater to diverse learning styles and adapt through the utilization of technology. They also accommodate individual differences and student interests through multimedia and interactive content. Moreover, digital curricula offer cost-effectiveness compared to traditional printed materials, making them a sustainable option (Al-Haroun and Abbas, 2020).

2.7 Crisis Management:
2.7.1 The Concept of Crisis Management:
The field of crisis management has emerged as a prominent discipline within contemporary human sciences, gaining heightened significance and undergoing continuous evolution, both on international and regional scales (Rainer, 2001). Crisis management approaches represent a modern facet of managerial thought, transcending conventional organizational structures and routine management practices to offer valuable guidance to organizations and institutions grappling with crisises. These approaches have become increasingly vital in sustaining the dynamics of contemporary life (Al-Jameel, 2022). Consequently, within the administrative encyclopaedia, crisis management is succinctly defined as a "mechanism for resource preservation," encompassing the safeguarding of an organization's assets, the attainment of requisite revenues, and the protection of its human capital against multifarious risks (Jadallah, 2010). Alternatively, crisis management is delineated as the systematic utilization of various

scientific and administrative tools to control and navigate crises, extracting positive outcomes from them. This discipline revolves around the orchestration of adaptation and alignment with diverse changes, harnessing their impacts across all facets of the organization. This is achieved through a methodological process involving the detection and anticipation of internal and external environmental variables contributing to crises, as well as the mobilization of available resources and capabilities to prevent or mitigate crisis effects efficiently, all while minimizing harm to the organization and its workforce. A pivotal focus is placed on expeditiously restoring normalcy (Misse and Malin, 2017). In this context, the extent of an organization's crisis management proficiency hinges on its ability to process information effectively, recognizing that crises manifest as situations stemming from uncertainty due to informational gaps. Accordingly, management must establish mechanisms for the collection and analysis of information to proactively avert crises or mitigate their consequences (Spillane and William, 2001). Fundamentally, crisis management predicates itself on foresight, strategic planning, methodical coordination, and the avoidance of impromptu improvisation and transient emotional reactions (Hussein and Ali, 2021).

2.7.2 Dimensions of Crisis Management:
The dimensions of crisis management adopted by Al-Suwaidi (2015) were adopted in his study, which is based on the most common model in determining the stages of crisis management :

1. Detecting warning signals: The inception of a crisis commences with the emergence of subtle indications, signifying the presence of an impending threat that forewarns potential hazards, albeit without distinct delineation owing to the scarcity of information accessible to the organization's leadership (Simola, 2005). It is through the perceptual acumen to recognize these precursor signals, drawn from diverse sources encompassing data, primary information, feedback mechanisms, and the insights and observations of employees, informed by their accumulated expertise and knowledge base (Hussein et al, 2023). Moreover, Preadoananthasuk (2014) contends that crises typically emit a sequence of progressive precursory signals, manifesting well in advance of the actual crisis event. Neglecting due diligence in heeding these signals inevitably culminates in the occurrence of a crisis.

2. Preparedness and prevention: This phase is indicative of the organizational management's level of preparedness and readiness to address and mitigate the adverse consequences of a crisis that has already transpired, with the understanding that it could not be averted (Kendrick et al, 2019). During this stage, concerted and sustained endeavours are channelled toward the preparation and mitigation of the crisis, commencing after the detection and comprehension of warning signals (Hensgen et al, 2003).

3. Containing the damage: The imperative of damage containment becomes evident following the onset of a crisis, with its primary objective being the preparation of requisite measures to mitigate harm and prevent its propagation to unaffected segments of the organization. In this phase, the management executes pre-established crisis response strategies, diligently prepared in anticipation of the crisis reaching its zenith. Effectively navigating this stage necessitates the mobilization and judicious management of available resources and capabilities to minimize losses and associated costs (Ocal et al, 2005). Subsequently, it encompasses activities conducted after damage containment, comprising the implementation of both short-term and long-term programs. These programs encompass meticulously designed and rigorously tested initiatives. Furthermore, they encompass recovery activities, including morale restoration among affected personnel. Typically, crisis-induced challenges, such as increased workload and the need for enhanced teamwork and cohesion during times of peril, manifest within the workforce. Short-term objectives are instrumental in facilitating the restoration of activity to a baseline state, while long-term plans are tailored to varying crisis impact levels and subsequent recovery durations (Hassan and Hamed, 2022).

4. Restoration of activity: The progression of the crisis to this juncture signifies the commencement of a gradual abatement of its outward signs and the organization's restoration to the state of equilibrium that existed before the crisis. The organization embarks on a trajectory toward reinstating its former status by delineating essential services and tasks necessary for conducting operations, with a particular emphasis on prioritizing fundamental requirements. During this phase, concerted efforts are directed toward interconnecting various organizational components and facilitating synergy between human needs and advanced technological resources, as outlined in the recovery plans aimed at re-establishing operational activity (Martinet, 2007). Atiyah (2015) indicated that the stage of restoring activity should take place according to the plans prepared for it, which are based on addressing the effects

5. Learning: According to Rerup (2009), the process of learning holds significant importance as it entails gleaning valuable insights from an organization's own experiences or those of analogous organizations. Such insights serve as a foundation for deriving benefits and fostering expertise in preparation for addressing prospective crises. Importantly, the concept of learning is not merely about exchanging blame or pointing fingers at others but is instead centered on a commitment to the enhancement and refinement of capabilities. This focus on capacity development equips the organization with the skills necessary to navigate future challenges and crises effectively. Priporos and Polmenidis (2008) characterize this phase of learning as the "experience-gaining stage," drawing upon the organization's prior practices as a guiding reference.

2.8 Data Analysis:
2.8.1 Testing Reliability:

The questionnaire was presented to some arbitrators with various expertise and specializations to express their views on the extent of clarity and interdependence of the questionnaire's items and their suitability for measuring the research variables. The Cronbach's Alpha Coefficient was used to measure the internal consistency of the scale items, its dimensions, its variables, and the whole scale. Through Table 5, it is clear that the internal consistency coefficient (Cronbach's Alpha) for the scale as a whole has reached its value (0.984). It has a high rating and these results indicate that the current research scale (resolution) has a good level of stability.

Table 5: Cronbach's Alpha Coefficient

research variables	Alpha Cronbach
Infrastructure Suitability	0.885
Teacher s' Readiness	0.810
Students' readiness	0.823
Curriculum Suitability	0.858
Blended Learning	0.930
Detecting Warning Signals	0.918
Preparation and Prevention	0.926
Containing Damage	0.940
Restoring Activity	0.903
Learning	0.914
Crisis Management	0.976
Total	0.984

The source: prepared by the researchers based on the statistical program (SPSS v26).

2.8.1.1 Describe the dimensions of Blended learning:

Table 6 summarizes the findings of the descriptive analysis of the dimensions of Blended learning at the investigated colleges in terms of arithmetic mean, standard deviation, and relative importance. The overall average of the arithmetic mean of the items following (infrastructure suitability) was (x1-x7) (3.071). The general standard deviation was 0.796, while the dimension (teachers' readiness) for the studied sample (x8-x14) had a general arithmetic mean (3.605) and a standard deviation (0.598), the dimension (students' readiness) for the studied sample (x15-x21) had a general arithmetic mean (3.128) and a standard deviation (0.665). While the dimension (curriculum suitability) for the studied sample (x22-x27) had a general arithmetic mean (3.506) and a standard deviation (0.617). Overall, the findings revealed that all of the sample responses are homogeneous and legitimate for statistical analysis and that the research sample is aware of the dimensions of blended learning.

Table 6: The Descriptive Analysis of Blended Learning

Items	Arithmetic Mean	Standard Deviation	Relative Importance
x1	2.533	1.047	50.65%
x2	2.491	1.041	49.81%
x3	3.180	1.189	63.60%
x4	2.870	1.127	57.41%
x5	3.159	1.035	63.17%
x6	3.616	0.916	72.32%
x7	3.652	0.937	73.02%
Infrastructure Suitability	3.071	0.796	61.43%
x8	3.412	1.062	68.24%
x9	3.806	0.875	76.12%
x10	3.497	0.890	69.93%
x11	3.609	0.830	72.18%
x12	3.602	0.851	72.04%
x13	3.370	0.914	67.40%
x14	3.940	0.655	78.79%
Teacher s' Readiness	3.605	0.598	72.10%
x15	3.011	0.895	60.22%
x16	3.216	0.926	64.30%
x17	2.990	0.947	59.80%
x18	2.786	0.990	55.72%
x19	3.053	0.993	61.07%
x20	3.581	0.899	71.62%
x21	3.264	1.020	65.29%
Students' Readiness	3.128	0.665	62.57%
x22	3.482	0.823	69.65%
x23	3.849	0.671	76.96%
x24	3.469	0.827	69.36%
x25	3.419	0.844	68.38%
x26	3.370	0.836	67.39%
x27	3.447	0.912	68.95%
Curriculum Suitability	3.506	0.617	70.12%

The source: prepared by the authors based on the statistical program (SPSS v26).

2.8.1.2 Describe the dimensions of Crisis management:

Table 7 summarizes the findings of the descriptive analysis of the dimensions of the investigated company in terms of arithmetic mean, standard deviation, and relative importance. The overall average of the arithmetic mean of the paragraphs following (detecting warning signals) for the sample studied was (y1-y9) (3.496). The general standard deviation was 0.633, while the dimension (preparation and prevention) for the studied sample (y9-y17) had a general arithmetic mean (3.518) and a standard deviation (0.714), and the overall average of the arithmetic mean of the paragraphs following (containing damage) for the sample studied was (y18-y25) (3.6). The general standard deviation was (0.706), while the dimension (restoring activity) for the studied sample (y26-y33) had a general arithmetic mean (3.57) and a standard deviation (0.635), and the dimension (restoring activity) for the studied sample (y34-y40) had a general arithmetic mean (3.536) and a standard deviation (0.659). Overall, the findings revealed that all of the sample responses are homogeneous and legitimate for statistical analysis and that the research sample is aware of the dimensions of crisis management.

Table 7: The Descriptive Analysis of Crisis Management

Items	Arithmetic Mean	Standard Deviation	Relative Importance
y1	3.560	0.854	71.20%
y2	3.538	0.827	70.77%
y3	3.405	0.873	68.10%
y4	3.574	0.818	71.48%
y5	3.503	0.831	70.07%
y6	3.433	0.780	68.66%
y7	3.482	0.790	69.65%
y8	3.538	0.906	70.77%
y9	3.426	0.761	68.52%
Detecting Warning Signals	3.496	0.633	69.92%
y10	3.525	0.873	70.49%
y11	3.525	0.851	70.49%
y12	3.433	1.004	68.66%
y13	3.560	0.890	71.20%
y14	3.398	0.901	67.96%
y15	3.454	0.915	69.09%
y16	3.560	0.874	71.20%
y17	3.693	0.769	73.87%
Preparation and Prevention	3.518	0.714	70.37%
y18	3.736	0.796	74.71%
y19	3.595	0.817	71.90%
y20	3.588	0.883	71.76%
y21	3.482	0.931	69.65%
y22	3.644	0.802	72.88%
y23	3.637	0.817	72.75%
y24	3.532	0.884	70.63%
y25	3.588	0.839	71.76%
Containing Damage	3.600	0.706	72.01%
y26	3.511	0.925	70.21%

y27	3.482	0.990	69.65%
y28	3.637	0.790	72.74%
y29	3.659	0.751	73.17%
y30	3.490	0.771	69.79%
y31	3.539	0.801	70.77%
y32	3.742	0.653	74.86%
y33	3.504	0.849	70.07%
Restoring Activity	3.570	0.635	71.41%
y34	3.574	0.865	71.47%
y35	3.476	0.873	69.51%
y36	3.489	0.827	69.79%
y37	3.553	0.778	71.06%
y38	3.546	0.788	70.92%
y39	3.609	0.784	72.18%
y40	3.503	0.841	70.07%
Learning	3.536	0.659	70.71%

The source: prepared by the researchers based on the statistical program (SPSS v26).

2.8.2 Testing Research Hypotheses:

To analyze the results of the association between blended learning and crisis management, Table 3 shows the results of the two search variables, as the value of the association was 0.726, which is a strong direct and significant correlation, and this means that the greater the blended learning, the greater crisis management. Therefore, we accept the first main hypothesis which is: There is a significant correlation between blended learning and crisis management.

Table 3: The Value of the Correlation between Blended Learning and Crisis Management

The Independent Variable	The Dependent Variable	The Correlation Value	The Significant Level
Blended Learning	Crisis Management	0.726**	0.000

The source: prepared by the authors based on the statistical program (SPSS v26).

Table 4 displays the findings of the association between the two variables after analyzing the associations between blended learning and crisis management:

The dimension (infrastructure suitability) and crisis management had a correlation coefficient of 0.604 and a significance level of 0.000, so we accept the first sub-hypothesis which is : There is a significant correlation between infrastructure suitability and crisis management.

The dimension (teacher readiness) and crisis management had a correlation coefficient of 0.531 and a significance level of 0.000, accordingly we can accept the second sub-hypothesis which is: There is a significant correlation between teacher s' readiness and crisis management

The dimension (Students' readiness) and Crisis management had a correlation coefficient of 0.610 and a significance level of 0.000, so we accept the thread sub-hypothesis which is: There is a significant correlation between Students' readiness and Crisis management.

The dimension (curriculum Suitability) and Crisis management had a correlation coefficient of 0.639 and a significance level of 0.000. Thus we accept the fourth sub-hypothesis which is: There is a significant correlation between curriculum suitability and crisis management .

Table 4: Displaying the Values of the Link between Blended Learning Elements and Crisis Management

The Dependent Variable	The Independent Variable	The Correlation Value	The Significant Level
Crisis Management	Infrastructure Suitability	0.604**	0,000
	Teacher s' Readiness	0.531**	0,000
	Students' Readiness	0.610**	0,000
	Curriculum Suitability	0.639**	0,000

Source: prepared by the authors based on the statistical program (SPSS v26).

To analysis of the effect results between the two research variables (testing the second main hypothesis and its branches): Table 5 shows the analysis results of the independent variable's influence on the dependent variable, where Blended learning has a significant influence in Crisis management. Furthermore, the calculated -F-value is 155.885 which is bigger than the tabular (F) value, While (R2) explained (0.52%) of the occurred variations in crisis management. Moreover, the (β) value was (0.793) which indicates that the change value of crisis management if blended learning changes with one unit. Additionally, due to (Sig) (0.000) and the calculated F-value being bigger than the tabular -F-value. Hence, we can accept the first main hypothesis which is: There is a significant effect from blended learning on crisis management.

Table 5: The Impact of Blended Learning on Crisis Management

The dependent variable	Statistical Indicators	Blended Learning	Infrastructure Suitability	Teacher s' Readiness	Students' Readiness	Curriculum Suitability
Crisis Management	a	0.914	2.175	1.583	1.787	1.394
	β	0.793	0.447	0.545	0.563	0.614
	R^2	0.527	0.364	0.282	0.372	0.408
	Calculated (F)	155.885	80.242	54.913	82.943	96.533
	Sig	0.000	0.000	0.000	0.000	0.000
	Influence	Does	Does	Does	Does	Does

The source: prepared by the researchers based on the statistical program (SPSS v26).

To go into detail to know which factor of the independent variable has the highest and lowest influence, as the following:

1. Infrastructure suitability: The value of R^2 reached (0.364) which indicates the infrastructure Suitability factor explains (36%) of the occurred variation in crisis management. While (β) was (0.447) shows the change value of crisis management if the infrastructure suitability factor changes with one unit. Furthermore, the F-value was 54.913 which is bigger than the tabular -F-value, which leads us to accept the first sub-hypotheses which is: There is a significant effect from infrastructure Suitability on crisis management. These results are consistent with the study of Mackey et al ,(2012).

2. Teacher s' readiness: The value of R^2 reached (0.282) that indicates the teacher s' readiness factor explains (28%) of the occurred variation in crisis management . While (β) was 0.545 shows the change value of crisis management if infrastructure suitability factor changes with one unit. Additionally, the -F-value was 54.913 which is bigger than the tabular -F-value, which leads us to accept the second sub-hypothesis which is: There is a significant effect for teacher s' readiness on crisis management .

3. Students' readiness: The value of R^2 reached (0.372) that indicates the students' readiness factor explains (36%) of the occurred variation in Crisis management. While (β) was 0.563 shows the change value of crisis management if students' readiness factor changes with one unit. Moreover, the F-value was 82.943 which is bigger than the tabular -F-value. This leads us to accept the thread sub-hypotheses which is: There is a significant effect from students' readiness on crisis management.

4. Curriculum suitability: The value of R^2 reached (0.408) which indicates the curriculum Suitability factor explains (36%) of the occurred variation in crisis management. While (β) was 0.614 shows the change value of Crisis management if the curriculum Suitability factor changes with one unit. more, the -F-value was 96.533 which is bigger than the tabular -F-value, which leads us to accept the fourth sub-hypothesis which is: There is a significant effect from curriculum suitability on crisis management.

3. The discussion of results :

This research focused on measuring the effect of blended learning on crisis management during the Corona Pandemic (COVID-19) within nine government and private colleges in Iraq. The results of the analytical descriptive statistics revealed that the arithmetic averages related to blended learning came with a high level of importance from the point of view of the research sample. These results agree with the study of Al- Haroun and Abbas (2020). The results of the analytical descriptive statistics also revealed that the arithmetic averages related to crisis management came with a high level of importance from the point of view of the research sample , these results are consistent with the study of Al Suwaidi (2015) where the results exhibit a statistically significant relationship between blended Learning and crisis management. Likewise, it was found that the blended learning dimensions represented by infrastructure suitability, teacher readiness, students' readiness, and curriculum suitability which affect crisis management. Moreover, the researches findings revealed a significant relationship between blended learning on crisis management when all of its components are considered, as well as a relationship between each component and sustainable promotion. These results are consistent with the study of Bernawi (2020) which links learning that blended e-learning with traditional learning to achieve the greatest benefit in managing educational crises, and Abu Sitta (2021) study, which indicates the close connection between crisis management and blended learning.

4. Conclusions:

The research findings, derived from comprehensive data analysis, yielded several noteworthy conclusions:

1. Evidently, blended learning exerts a discernible influence on crisis management.. Furthermore, the constituent dimensions of blended learning, including infrastructure suitability, teacher readiness, students' readiness, and curriculum suitability impacts on crisis management. These outcomes substantiate the validity of both the primary hypotheses and their respective sub-hypotheses.

2. The results indicate that blended learning and strategic flexibility are perfectly applied in the investigated colleges and universities.

3. The research affirms the effective implementation of the dimensions that comprise the blended learning variable.

4. Remarkably, the research reveals that students demonstrate proficient utilization of electronic communication platforms accessible via the World Wide Web for tasks such as accessing research materials, attending lectures, and engaging in meaningful communication with their instructors.

5. Finally, the results indicate a commendable commitment among educational institutions, particularly colleges, in proactively addressing and mitigating crises. Colleges have demonstrated their preparedness through various measures aimed at containing crises, preventing their escalation, and effectively responding to evolving circumstances during crisis. Such measures encompass the isolation of crises and their associated challenges, efforts to neutralize the active forces within the crisis, and providing support to specialized teams tasked with managing and confronting crises.

Authors Declaration:

Conflicts of Interest: None

-We Hereby Confirm That All The Figures and Tables In The Manuscript Are Mine and Ours. Besides, The Figures and Images, Which are Not Mine, Have Been Permitted Republication and Attached to The Manuscript.

- Ethical Clearance: The Research Was Approved By The Local Ethical Committee in The University.

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تأثير التعليم المدمج في إدارة الأزمة أثناء جائحة كورونا (كوفيد - 19)

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المستخلص

يهدف البحث إلى اختبار علاقة تأثير التعلم المدمج في إدارة الأزمة التعليمية لجائحة كورونا في (9) كليات حكومية وخاصة في العراق، لتشخيص مستوى اهتمام الكليات المذكورة بمتغيرات البحث الرئيسية و أبعادها، والخروج بمجموعة من الاستنتاجات التي تساهم في تحسين مستوى الأداء التعليمي بما يضمن تحقيق الجودة في مخرجاتها عند اعتمادها بناء على حداثة هذه المتغيرات وأهميتها الملحة في استدامة العملية التعليمية.

اعتمد الباحث على المنهج الوصفي التحليلي في تحقيق متطلبات البحث، وتكوّن مجتمع البحث من أعضاء هيئة التدريس في الأقسام المتخصصة في العلوم الإدارية والاقتصادية في الكليات المختارة، وبلغت العينة (142) أستاذاً جامعياً وزعت عليهم أداة البحث الرئيسة (الاستبانة) . كما اعتمد البحث على البرامج الإحصائية (SPSS V.26) لتحليل البيانات الأولية، مع استخدام أساليب الإحصاء الوصفي والاستنتاجي لاختبار فرضيات البحث. وأظهر التحليل الإحصائي عدداً من النتائج أبرزها وجود ارتباط وتأثير معنوي للتعليم المدمج بأبعاده (ملائمة البنية التحتية، استعداد أعضاء هيئة التدريس، استعداد الطلاب، ملائمة المقررات الدراسية) في إدارة الأزمات بأبعادها (اكتشاف اشارات الانذار ،الاستعداد والوقاية، احتواء الاضرار، استعادة النشاط ، والتعلم).

نوع البحث: ورقة بحثية.

الكلمات الرئيسة: التعليم المدمج ، إدارة الأزمة ، جائحة كورونا .