Strategic evaluation of e-learning: A case study of the university of Jordan during crisis

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CHRONICLE	ABSTRACT
	Crises possess a remarkable propensity to serve as catalysts for change, particularly within the sphere of education. They catalyze change in several key dimensions, including Accelerated Adoption of Technology, Highlighting Inequalities, Global Collaboration, Adaptation of Assessment Methods, Engagement with Online Resources, and Reimagining Education. In essence, crises compelling educational institutions to reevaluate long-standing norms and embrace innovative solutions. They shine a spotlight on challenges that may have remained overlooked and stimulate the formulation of strategies aimed at cultivating a more robust, adaptable, and inclusive educational landscape. This study provides a comprehensive strengths, weaknesses, opportunities, and threats (SWOT) analysis of E-learning at The University of Jordan amid the COVID-19 pandemic, offering valuable insights for strategic planning during crises. Based on data collected from 379 undergraduate students in the year 2022, it reveals strengths in terms of convenience and flexibility but highlights weaknesses such as low bandwidth and unstable internet connections. Additionally, it recognizes the opportunity for E-learning effectiveness during lockdowns while identifying threats like unreliable power supply and inconsistent internet access. This analysis enriches our understanding of the educational landscape and equips decision-makers with essential insights to enhance E-learning resilience and effectiveness during challenging times.

1. Introduction

The COVID-19 pandemic, which emerged in late 2019, had a profound and disruptive impact on education worldwide. The World Health Organization (WHO) has announced in January 2020 a public health crisis worldwide which was a new coronavirus disease outbreak and was reported as a pandemic in March 2020 (WHO,2020) placing it at the highest risk level for infectious diseases. In response to the rapid spread of the virus and the need to protect the health and safety of students, teachers, and communities, many educational institutions had to close their physical campuses temporarily with short-term decisions and actions were implemented in all areas of education and for all students which led to the total suspension of public education and university classes, which forced them to revise their original education plans (Oak,2020; Almanthari et al., 2020; Toquero ,2020). Here's some background on the use of e-learning during the COVID-19 period (Zheng ,2020; Jena, 2020; Alexander et al., 2020; Rehman & Khan, 2020; UNU, 2020):

1. Closure of Physical Schools: As the pandemic unfolded, governments and educational authorities around the world made the difficult decision to close physical schools and universities to prevent the spread of the virus. These closures varied in duration but, in many cases, were prolonged.

2. Urgent Need for Continuity: The closure of schools left millions of students without access to traditional, in-person education. There was an urgent need to ensure that education could continue despite the physical restrictions, and e-learning emerged as a viable solution.

3. Digital Transformation: Many educational institutions, which had previously been slower to adopt digital technologies, were suddenly forced to undergo a rapid digital transformation. This involved deploying online learning platforms, providing teachers with training in remote teaching methods, and equipping students with the necessary devices and internet access.

4. Challenges of Remote Learning: The transition to e-learning during the pandemic came with numerous challenges. These included disparities in access to technology and the internet, the need for educators to quickly adapt to new teaching methods, and concerns about the quality of online education compared to traditional classroom instruction.

5. Variety of E-Learning Approaches: E-learning during the pandemic took various forms, including live virtual classrooms, pre-recorded video lessons, interactive learning platforms, and a combination of these methods. Educational institutions experimented with different approaches to find what worked best for their students and faculty.

6. Global Collaboration: The pandemic necessitated global collaboration among educators, policymakers, and technology companies to share best practices, resources, and technologies for effective e-learning. This collaboration helped address some of the challenges associated with remote education.

7. Long-Term Implications: While e-learning was initially implemented as a response to the crisis, its adoption during the pandemic had long-term implications. It highlighted the potential for blended learning models that combine online and in-person instruction, and it underscored the importance of building digital literacy skills.

The lockdown of the educational institutes due to COVID-19 pandemic has led to a high demand for E-Learning (Murphy, 2020). The "E" in E-learning stands for electronic, expanded efficient exploratory, enhanced, experiential, and easy to use learning (Zhou et al., 2020). Indeed, the widespread adoption of online teaching has brought about both opportunities and challenges. For example, not all countries can provide the same style of education for learners due to social inequality due to economic infrastructure (UNESCO, 2020).

In Jordan, a nationwide lockdown was imposed from 16 March 2020, which has been extended many times depending on the situation. The Ministry of Higher Education and Scientific Research (MoHE) has issued a directive for all universities, including both public and private institutions, to suspend in-person teaching on campus and transition to online classes using synchronous e-learning platforms. The universities in Jordan adopted non-synchronous models of E-learning at the beginning of the pandemic. This approach allowed students and instructors to interact and engage with course content through various online platforms, including video conferencing tools like "Zoom" to finish the academic year. At the beginning of the next new academic year, the universities adopted "Microsoft Teams" as a new model for E-learning (Al-smadi et al., 2022).

The introduction of E-learning in Jordan dates to January 2003 when web networks were first utilized. This marked the initiation of E-learning in the country, and it was established through collaborations between various organizations, including partnerships between the public and private sectors (Almarabeh & Mohammad, 2013), but applying it mainly, completely, and remotely according to the possibilities and circumstances, was very difficult. The E-learning experience is different during a crisis. Indeed, the COVID-19 pandemic has had a profound impact on education systems worldwide, including in Jordan. With the restrictions and safety measures in place to curb the spread of the virus, Jordanian universities, like many others globally, were compelled to swiftly adapt to new modes of teaching, including E-learning.

The purpose of this research to use SWOT analysis to assess the strengths, weaknesses, opportunities, and threats encountered in the implementation of e-learning during the crisis at The University of Jordan.

This paper is organized as follows: section 2 contains the literature review, section 3 theoretical framework, followed by section 4 the research methodology. Discussion and Results in section 5. Finally, the conclusion section 6.

2. Literature Review

Many researchers provided insights into the use of SWOT analysis as a valuable tool for assessing and improving E-learning strategies during the COVID-19 pandemic in various educational contexts. Based on the study which conducted at the School of Continuing and Distance Education (SCDE), University of Ghana, Legon, aimed to assess the Strengths, Weaknesses, Opportunities, and Threats (SWOT) of using the eLearning platform SAKAI (Owusu-Ansah, 2019). Here are some key findings and implications: No Significant Relationship with ICT Skills: The study found that the strengths, weaknesses, opportunities, and threats associated with using the SAKAI eLearning platform did not have a significant relationship with the level of ICT skills among distance learners. This suggests that factors other than ICT skills are more critical in determining the effectiveness of SAKAI. Focus on Internet Stability and User-Friendly Interface: The study recommends that management should prioritize ensuring a stable internet connection, improving the user interface for ease of use, and making the platform accessible via mobile technology. These aspects are considered more important than relying on the ICT skills of students since SAKAI is user-friendly and doesn't require extensive training.

Content Organization and Real-time Improvements: Management should also pay attention to the organization of the content within the SAKAI platform. Additionally, the study suggests that real-time improvements based on feedback and demand from distance learners could enhance the platform's usability.

Positive Elements for Adoption: The study indicates that there are several positive factors influencing the adoption and use of eLearning platform SAKAI. These include access to technical support, ease of use, a favorable attitude toward eLearning, and recognition of its use and application.

Negative Elements Affecting Adoption: The research highlighted negative elements impacting the adoption of eLearning platforms. These include the need for continuous technology training, the dynamic nature of technology, limited marketing exposure, and a lack of scholarly recognition for eLearning efforts.

In summary, the study suggests that improving the user experience and addressing infrastructure-related issues are more critical for the successful adoption and use of the SAKAI eLearning platform at the SCDE, University of Ghana, than focusing solely on the ICT skills of students.

Many researchers have studied the learning through COVID-19 pandemic, for example: (Bao, 2020) highlights in his research the rapid transformation that educational institutions underwent in response to the widespread impact of the pandemic. (Mishra et al., 2020) experimental study in India aimed to gain insights into students' perspectives and opinions regarding online education during the COVID-19 pandemic, while (Bojović et al., 2020; Aguilera-Hermida, 2020) conducted similar studies but in different countries.

Other researchers (Akinbadewa & Sofowora,2020; Seage & Türegün,2020; Alharthi, 2020; Serhan, 2019; Al-Husban, 2020) have focused on different aspect, they investigated the effects of distance learning and have identified a range of advantages, i.e., lifelong learning, cost saving, and continuity of education. Others have focused on the limitations, i.e., scheduling and time Management, teaching methods, and absence of physical presence (Thompson & McDowell, 2019; Weinhandl et al., 2020).

3. Methods and Procedures

3.1 Theoretical Framework

The researchers used SWOT analysis, which stands for Strengths, Weaknesses, Opportunities, and Threats analysis, which is a strategic planning tool that originated in the 1960s. It was developed by Albert S. Humphrey and a team of researchers at the Stanford Research Institute during a project for the Fortune 500 companies. It has since become widely adopted by businesses, nonprofit organizations, government agencies, and individuals as a valuable tool for assessing a situation, formulating strategies, and making informed decisions. It is used in various fields, including business, marketing, healthcare, education, and more, to analyze and plan for a wide range of scenarios:

The use of SWOT analysis in the context of e-learning serves several important purposes (Thompson et al., 2007):

1. Comprehensive Assessment: SWOT analysis provides a holistic and structured framework for evaluating E-learning initiatives. It encompasses both internal (strengths and weaknesses) and external (opportunities and threats) factors, offering a well-rounded view of the situation.
2. Identification of Strengths and Weaknesses: During a crisis, educational institutions need to quickly identify their E-learning strengths and weaknesses. SWOT analysis helps pinpoint areas where institutions excel (e.g., robust online platforms, skilled educators) and areas that require improvement (e.g., limited digital infrastructure, insufficient teacher training).
3. Opportunity Recognition: Crises often bring about new opportunities and challenges. SWOT analysis helps institutions identify and seize opportunities in the E-learning landscape. For example, the sudden shift to remote learning highlighted the potential for innovative teaching methods and global collaboration.
4. Risk Mitigation: The external factors assessed in the SWOT analysis include potential threats. In a crisis, identifying threats to E-learning, such as cybersecurity risks or unequal access to technology, is crucial. Once identified, institutions can take proactive measures to mitigate these risks.
5. Strategic Decision-Making: SWOT analysis aids in informed decision-making. During a crisis, educational leaders must make quick, yet well-informed decisions about resource allocation, technology investments, and pedagogical approaches. SWOT analysis provides the data needed for effective decision-making.
6. Resource Optimization: Crises often involve resource constraints. SWOT analysis helps institutions allocate their limited resources effectively. By focusing on strengths and opportunities, institutions can prioritize initiatives that have the greatest impact.

7. Adaptation and Flexibility: Educational institutions need to be adaptable during a crisis. SWOT analysis promotes adaptability by revealing changing dynamics and potential shifts in the educational landscape. This information allows institutions to pivot and adjust strategies as needed.

8. Continuous Improvement: The insights gained from SWOT analysis are not limited to crisis response; they inform long-term planning. Institutions can use this information to continuously improve their E-learning offerings, making them more resilient and effective in the face of future challenges.

In summary, SWOT analysis is a valuable tool for measuring E-learning during a crisis because it offers a structured, comprehensive, and forward-looking approach. It equips educational institutions with the insights needed to navigate challenges, capitalize on opportunities, and make informed decisions, ultimately fostering resilience and adaptability in the realm of E-learning. This study is performing SWOT to evaluate the educational challenges of E-learning at The University of Jordan during the COVID-19 pandemic, which help to develop strategies that leverage the strengths, address the weaknesses, capitalize on opportunities, and mitigate the threats identified in the analysis (Parker et al., 2013; Dyson, 2004) at the University of Jordan. The study has the following limitations:

1. Single University Focus: The study is limited to only one public university, namely The University of Jordan.
2. Undergraduate Student Sample: The study's participants are exclusively undergraduate students from The University of Jordan.

3.2 Research Methodology

Based on data collected from 379 undergraduate students registered in three compulsory courses in 2022, which were collected via an online questionnaire. The structured questionnaire was organized into 2 parts; the first part contains the sample demographics i.e., gender, academic year, faculty, and residential area. The second part contains 18 questions: 5 questions for Strengths, 4 questions for Weakness, 4 questions for Opportunities, and 5 questions for Threats. The second part questions used a 5-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree) to measure students' response. The questions for this study are adopted from previous studies (Ricky et al., 2017; Hande, 2014; Chang & Kintu, 2015; Oroms et al., 2015; Okaz, 2014; Ali et al., 2019) with ignoring some questions, which did not suit the situation of students at the University of Jordan, such as:

✓ The University of Jordan had the foresight to provide a flexible and cost-effective learning environment through freely available i.e., E-library resources, videos, and lecture notes even before the pandemic.
✓ The E-learning platform at The University of Jordan has provided students with this flexibility to access course materials, even before the pandemic.

Fig. 1 shows the research model employed in this study.
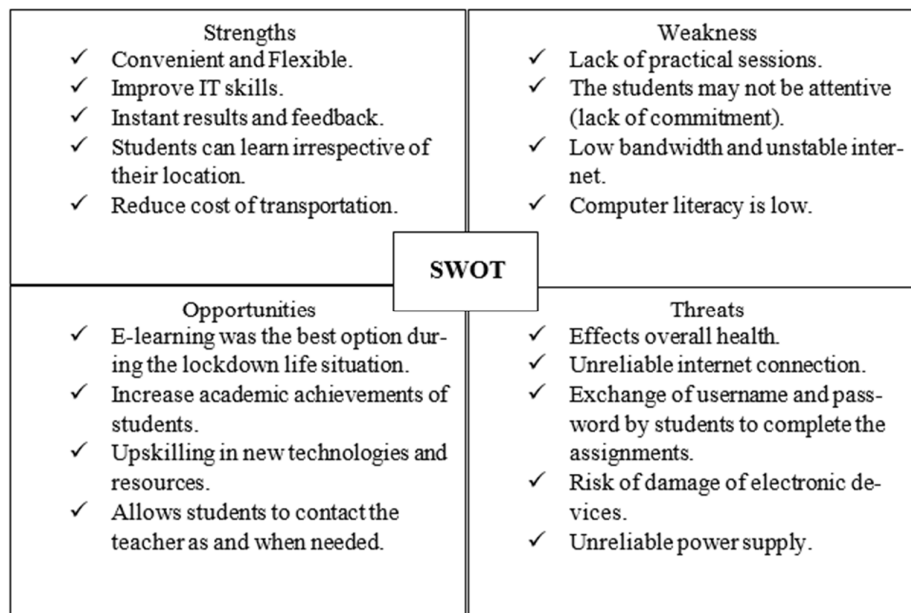
Fig. 1. SWOT Analysis towards E-learning

4. Results and Discussion

The SWOT analysis shown in Fig.1 was tested using SPSS version 21. The demographic information of participants shown in Table 1 in the category of gender, academic year, faculty, residential area, and time of E-learning. Most of the respondents were female and participated in this research with percentage 76.5%. It is indicated from Table 1 that many of the students were living in urban areas, which is 83.9%. The lowest number of students in the sample is from scientific colleges, followed by students from medical colleges, and this is expected because the sample was taken from students enrolled in 3 compulsory courses: one course for students of scientific faculties, and the two other courses for students of medical and humanities faculties.

Table 1
Sample Demographics

Variables	Characteristics	Frequency	Percent%
Gender	Female	290	76.5
	Male	89	23.5
Academic Year	First Year	215	56.7
	Second Year	94	24.8
	Third Year	40	10.6
	Fourth Year	30	7.9
Faculty	Medical	152	40.1
	Scientific	66	17.4
	Humanities	161	42.5
Residential Area	Urban (City)	318	83.9
	Rural	61	16.1

The researchers used Cronbach's coefficient alpha (α) to examine the reliability. Typically, a Cronbach's alpha value of 0.60 or higher is considered acceptable for most research purposes (Hair et al., 2010). The results which are shown in Table 2 indicate there is excellent reliability i.e., 0.803 for the Opportunities to 0.887 for the Strengths. The results indicated the overall major strengths of online learning as perceived by students. The major strength of E-learning at the pandemic was its convenient and flexibility with highest mean value (3.8470) followed by its role in improving students' IT skills (mean value = 3.6491). They are as well confirmed by other researchers such as (Ricky et al., 2017; Winterstein et al., 2012; Ho et al., 2006; Tshabalala et al., 2014; Hande 2014), then reduction in the cost of transportation with mean value (3.6385). This is due to the availability of public transportation between main cities at a reasonable cost.

Table 2
Detailed SWOT Analysis of E-learning during COVID-19 pandemic at The University of Jordan students

Constructs	Items	Cronbach α	Mean
Strengths	Convenient and Flexible	0.887	3.8470
	Improving IT skills		3.6491
	Reducing cost of transportation		3.6385
	Capability of students to learn irrespective of their location		3.5963
	Instant results and feedback		3.5383
Weakness	Low bandwidth and unstable internet	0.821	3.9789
	The students may not be attentive (lack of commitment)		3.9235
	Computer literacy is low		3.7493
	Lacking of practical sessions		3.4960
Opportunities	E-learning was the best option during the lockdown life situation	0.803	3.9235
	Upskilling in new technologies and resources		3.4960
	Increasing academic achievements of students		3.3879
	Allowing students to contact the teacher as and when needed		3.3720
Threats	Unreliability of power supply	0.854	4.0079
	Unreliability of internet connection		3.4591
	Risk of damage of electronic devices		3.2797
	Exchanging usernames and passwords among students to complete assignments		3.2639
	Effecting on overall health		3.0739

Regarding the weakness, students agreed that the most leading weakness of E-learning was the low bandwidth and unstable internet (mean value = 3.9789). This is consistent with the findings of earlier studies (Sabri et al., 2010; Oroma et al., 2018; Dandy et al., 2020) who observed that it was hard for the students to upload their course materials due to slow internet accessibility. It is further supported by some researchers who observed that slow internet speed can indeed pose a significant challenge to the implementation of e-learning (Rossett & Frazee, 2019; Hande, 2014; Kajumbula & Tibaingana, 2009; Bbuye, 2005). Respondents identified E- learning as the best-suited option during the lockdown (Mean=3.9235) as the first oppor-tunity because they know the only way to continue their classes by only E-learning, this is aligned with finding of (Shahzadi et al.,2022). Students also felt that E-learning allows the development of new online resources (Mean=3.4960). Many medical students have reported that they find online resources helpful (Ricky et al., 2017). A significant number of students highlighted

unreliable power supply as a major threat of E-learning during the pandemic. Followed by unreliable internet connection. These results are aligned with previous studies (Bbuye, 2005; Zhu & Justice Mugenyi, 2015; Oroma et al., 2018; Okaz, 2014).

5. Conclusion

E-learning proved its importance during crises such as the Covid-19 pandemic, as it was a pivotal way to maintain the continuity of the educational process in the face of restrictions and precautionary measures. This paper highlights SWOT analysis which is important to increase students' satisfaction of E-learning in case of exposure to emergency circumstances that lead to the cessation of traditional learning. It will help the decision makers to develop the strategic plan to implement E-learning successfully in crises and exceptional circumstances.

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