Changes in Learning with the Advent of E-Learning

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Abstract: *The history of the education system dates back many years, and since that time, it has been constantly changing. Students now find it extremely uninteresting to continue with traditional studying because of the significant advancements in technology. Learning is the process of gaining information or abilities through instruction, experience, or study. E-learning has become common knowledge in daily life as a result of the rise in technology use. We can access e-learning materials anytime, anywhere for this reason. The pedagogy, technology, and accreditation that make up e-learning are a trivial combination. In this essay, the advantages and disadvantages of traditional learning are compared with those of e- learning. This article illustrates several resource kinds, their variations, and how e- Learning improves performance. The parameters for obtaining benefits from the various educational systems have been identified. In comparison to traditional learning, there are many differences in e- learning. Are these two systems actually different? has always been a topic of intense discussion. If so, what characteristics set them apart from one another? With a thorough methodology, this study intends to compare traditional learning versus online learning.*

Keywords: E-learning, traditional learning vs e-learning, traditional learning, covid.

I. INTRODUCTION

In the 1990s, the idea of e-learning was developed to comprehensively explain learning through technological advancements. High school and university education have become increasingly important to the development of e-learning. The world's global education system faced the most challenging task at the end of 2019 from the coronavirus pandemic. In March 2020, COVID-19 was declared a global pandemic (WHO 2020). Almost every activity, including education, was impacted. Schools and universities were shuttered as a result of it. With the shutdown occurring in March 2020, more than 1.6 billion people who were a part of the school system in roughly 190 nations were impacted. With the unprecedented switch from traditional to online learning, technology was the only way to get out of this position. More than 190 countries throughout the world have experienced the greatest disruption of their educational institutions in history. Up to 99 percent of the student population worldwide who come from lower-middle-income countries has been harmed by the closure of academic institutions (The Economic Times, 2020). The COVID-19 epidemic has ended face-to-face education, which has had a negative impact on educational activities.

Social distance is important.

E-learning has emerged as a significant alternative for overhauling the entire traditional educational system during the COVID-19 epidemic. The behaviours, teaching/learning philosophies, evaluation techniques, and other aspects of both instructors' and students' lives have to alter. The pandemic-related closures have encouraged the expansion of distant education programmes as alternatives to in- person instruction in all of its forms. As a result, numerous colleges have exchanged information on how to engage students, distribute course materials remotely, and administer exams. The benefits of this reform outweigh the conflicts and disappointments it has generated among both the teaching act recipients and the educational players. Despite being well recognised, the idea of online learning has not yet been properly investigated. Many countries designed and deployed distance education systems during the COVID-19 pandemic to ensure that higher education could continue without interruption. In order to streamline the educational process, especially the one carried out in the university environment, creative and constructive interventions are required.

When looking at the scientific studies published during the COVID-19 pandemic, it shows clearly that many international journals have published a large number of academic articles about e-learning in higher education during COVID-19

(Karakose and Demirkol, 2021). COVID-19 forced the shift to online learning, but some universities in underdeveloped countries are not adequately equipped to teach online efficiently. Moreover, the faculty's training is different globally between high-income, middle, and lower income countries.

Another major obstacle is the Internet connectivity for underprivileged students. It is a due facto that face-to-face instruction is more efficient than online and the complete shift to online during COVID-19 makes it necessary to investigate the perception of faculty and students on online learning to identify the advantages and disadvantages, and challenges of online learning.

Although e-learning has become a topic of discussion in the late 1990s, only now, during the 2020 pandemic, it seems that the world has focused almost entirely on e- learning for a longer or shorter period of time, adapting and re-adapting to the new reality. More and more studies have begun to emerge in this field of research, as it has become increasingly exploratory and fertile for worldwide researchers

While the whole world is facing much trouble in the last few months, it has been difficult for the world, and the impact of online learning has been significantly observed on faculty members and students in particular. Teaching and learning online has a wide range of advantages, yet poses some challenges. It makes the process of learning for students' comfort due to time flexibility in attending classes. However, online learning acts as a barrier to the engagement of students in real class activities. Moreover, students lack the influence of peer learning. These challenges also leave an impact on student's personalities and prevent them from taking their turns. Additionally, the faculty's role is to teach, monitor, and provide advice for students on both academic and personal levels. The current crisis, COVID19, highlights the role of the Internet and technology in all walks of life including education. The pandemic has shown the role of online education in coping with abrupt crises, and therefore it is significant to understand both faculty's and student's perceptions concerning online classes.
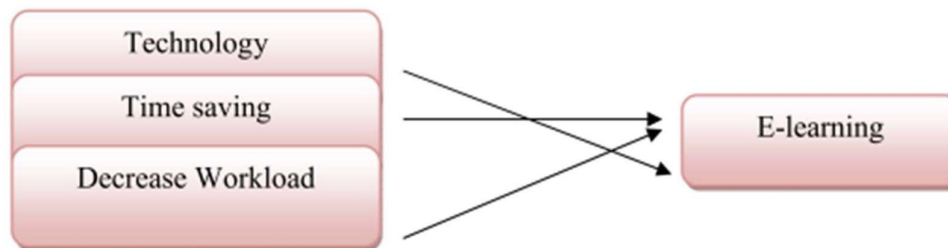

Figure no. 1

II. OBJECTIVE

The purpose of the study is to carry out the comparison of traditional learning and e- learning with reference to university education. Methodology: A comparative analysis method that has been selected to fulfill the purpose of the study. The research data has been collected by various sources internet, previous research studies published in the Journal, universities which offer different technical and nontechnical programs .and further analyzed by in-depth understanding approach. Result: The outcome of this study will show the effect of e-learning in the current era. As we have compared e-learning with traditional learning and the result shows us that e- learning has filled the gap between the universities and the real-life industries' demands. Main finding: The result of this study showed that e-learning is the need of the present era in order to fulfill the gap between the universities and the real-life industries' demands. Additionally, e- learning based courses will have more impact and provide more skill and exposure to students as compared to traditional learning mode. Implications/Applications: This article can help the different universities and students to introduce more e-learning courses in their curriculum and they can fill the real-time industries' demands. Novelty/originality of the study: Our research can ensure that e-learning has a huge impact on our students and can help to increase the skills and exposure of them according to the current demands.

III. LITERATURE REVIEW

Related works of E-learning system usage The success of any information system depends on the usage of the system by users (Almaiah 2018). Thus, in the context of e-learning system, student's acceptance of elearning is considered as one of the main criteria for the success e-learning system. Several studies in the literature have addressed issues related to e-

learning adoption in many countries over the world. For instance, in Malaysia, Al-Rahmi et al. (Almaiah and Man 2016) used the TAM with IDT model to investigate the critical factors that affect the use of e-learning system Malaysian students. The results revealed that relative advantages, observability, trialability, perceived compatibility, complexity, and perceived enjoyment are the factors that play a significant role in students' decision to use e-learning system in Malaysia. Salloum et al. (2019) used UAE as a case study for a quantitative investigation. The results indicated that four factors (innovativeness, quality, trust, and knowledge sharing) were observed to achieve better e-learning system acceptance among students. Al-Gahtani (2016) investigated the factors influencing student acceptance of e-learning based on TAM3. He found the most significant determinants of e-learning acceptance were playfulness, self-efficacy and anxiety, while using computers, perceptions of external control, subjective norms and perceived usefulness. However, in the context of Saudi Arabia, social influence, demonstrability and perceived enjoyment were not related to the acceptance of e- learning systems. Another study conducted by Almaiah and Almulhem (Almaiah et al. 2016a), they proposed new framework using Delphi method to determine the success factors of elearning system implementation in Saudi Arabia. The results highlighted 11 critical factors grouped into four domains that cover website quality, technology options, top management support, and e-learning awareness by academic faculty and students. Bellaaj et al. (2015) used the Unified Theory of Acceptance and Use of Technology (UTAUT) model to explore the factors affecting students' use of e-learning systems at the University of Tabuk, Saudi Arabia. They found that expectations regarding performance and effort had a strong influence on e-learning acceptance. In another study in Azerbaijan, Chang et al. (2017) found subjective norms, experience and enjoyment influenced acceptance of e- learning. Abdullah and Ward (2016) also investigated factors influencing e-learning acceptance using TAM. Their findings revealed that self-efficacy; subjective norms, enjoyment, anxiety and experience with using computers had a significant effect on students' acceptance of e- learning. Similarly, Alhabeeb and Rowley (2017) found that academic staff knowledge of learning technologies, student knowledge of computer systems and technical infrastructure, were significant factors in facilitating the successful acceptance of e-learning in Saudi Arabian universities. Although numerous studies exist on e-learning adoption, the current study aims to add new contribution to the existing literature on investigation of the main challenges and factors influencing e-learning successful adoption in new context, which is Jordan, which may set an example for other developing countries.

3.1 Online Learning and Classroom Learning

Online learning has become one of the talking points in the 21st century. Online learning is the delivery of instruction via digital resources. This kind of learning is delivered through the use of electronic devices. Distance education, computerized electronic learning, and internet learning are other names used to describe online learning. The introduction of online learning means the students can now access their learning materials online and anytime.

Emergence of technology has provided the avenue for education to be readily accessible at all levels over the past two decades. According to [16], the early stage of distance or online education required usage of access to print materials that were emailed or sent to students and/or teachers. However, reported that the development of e-learning management systems and web resources, as a result of technological advancement, transformed online education by boosting the pace at which information can be disseminated and digested. In recent online learning trends, videos and live broadcasting plays an important role. This is in line with, who posited that video is a more preferred means to online learning than documents, making learning more interactive and engaging. As such, there is always a teacher who communicates or interacts with students in online learning, grades their participation in class activities, and also their assignments and tests. anticipates that more visual technologies such as virtual reality (VR) and augmented reality (AR) are likely to find their way into the e-learning industry in the future. Over the past years, many researchers and institutions worldwide have researched the effectiveness of online learning. Classroom learning is also known as traditional or offline learning. Learning is acquiring new knowledge, skills, behaviors, and preferences. It is an active process of engaging and manipulating experiences to build mental models of the world. Learners learn as they explore, observe and interact with the world around them. Consequently, it involves building on prior knowledge.

Learning is a social activity that involves people who interact with the learning environment. Initially, formal education requires students and teachers to meet at a physical place, usually referred to as a classroom. This is because the technologies that existed at the dawn of civilization or formal education could not make it possible for lessons to be conducted online.

Consequently, most of the educational books written before the 21st century addressed classroom learning. Although online learning has gained some popularity in recent times, it is essential to know that classroom learning remains predominant, even in advanced countries like UK, China, the US, and others. Classroom learning takes place in school, and there is a calendar or timetable and rules and regulations that stipulate how teaching and learning should be done. Classroom learning requires students to be active in learning environment. Students and teachers need to be physically present in the classroom for the teaching and learning to take place. Thus, the class teacher regulates and moderates information and knowledge flow. Classroom learning provides the platform for open exchange of ideas and face-to-face interaction between the students and the teachers which promotes socialization among the teachers and the students. Creating a conducive classroom environment for students learning should be the concern of every teacher to facilitate learning. Still, in the final analysis, the social and psychological activities and responses of each student determine what they learn.
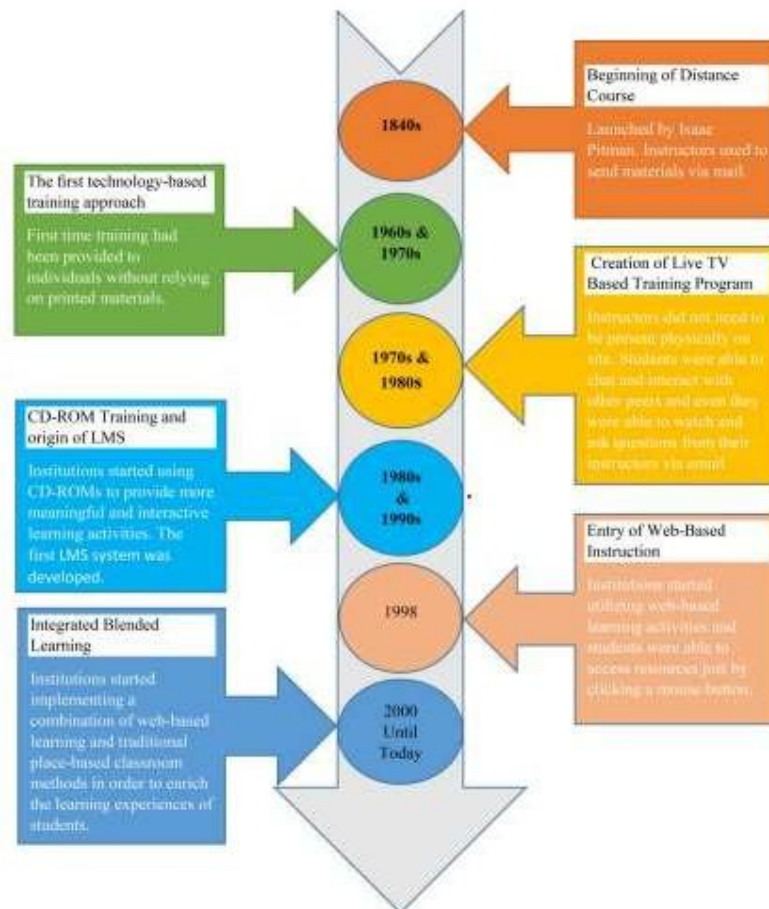

Figure no.2 Timeline of blended learning

Findings of the critical factors affecting the usage of E-learning system during COVID-19 pandemic This section includes the thematic findings that lead to the identification of the critical factors that affect the successful usage of e- learning system COVID-19 Pandemic. Based on the results, the respondents stated that the critical factors that needs to be addressed and should be taken in the future plans, which affect the usage of e-learning system are (1) technological factors, (2) e- learning system quality factors, (3) trust factors, (4) self-efficacy factors and (5) cultural aspects.

(1) Technological factors According to the respondents "technological factors is one of the necessary factors that ensure successful implementation of e-learning system". One of the experts added, "All technological factors should be taken into consideration during the implementation process. For example, if the universities have the necessary hardware and software for adopting e-learning system; but the universities lack the technical skills that are necessary to use those hardware and software, the result might be failure". In addition, the experts recommended "The physical equipment such

as computers, servers and communication networks that must be available to apply e-learning". In addition, "availability of the software applications and operating systems is very important". Experts also stated another important technological factor, which is technical skills and support through the knowledge, understanding and abilities that are used to accomplish tasks related to maintenance and upgrading of the infrastructure of computers, networks, communications, as well as providing support to users when they face technical problems.

(2) E-learning system quality factors The efficiency and quality of e-learning system was the main topic with the experts as a feasible method for gathering their opinions regarding the main factors that effect on the e-learning system adoption in Jordanian universities. All respondents agreed that: "The current e-learning systems are experiencing some potential hurdles regarding accessibility, availability and usability, especially for those who have less knowledge of the internet." Other experts shared the same perceptions of this factor and advised the universities to look into it seriously, as it could create an obstacle in its implementation and adoption by many students. Another expert stated: "The success of the e-learning system should be measured based on student satisfaction and personalization." The respondents also were asked to grasp their views about the current e-learning system and how it is developed as an easy to use system, especially for students who do not have great computer skills. The interviewees confirmed, "The current system is not easy to use by individuals who do not have PC skills; this will lead to system failure".

Expert 3 added, "The current e-learning system is not flexible in terms of its design". The interviewees (Expert 1 and Expert 2) also mentioned that: "There is significant correlation between ease of use and system adoption, as students could lose confidence in the system if they find it difficult to use". The respondents were then asked about the usefulness of the system and whether the current system is efficient in term of its usefulness. The expert 1 started first and said that the usefulness is related to how an individual feels the system is easy to use. "According to my experience with different IT/IS applications, Usefulness can't be separated from the friendliness of the system. First, the user needs to feel the system is free from effort in order to feel motivated to use it. Then he /she will try to use it to look at it from its usefulness." The same opinion was agreed upon by Expert 3, who added that the current system could be seen useful if students find it meets its purpose. "Users will feel more confident in using the e-learning system if it performs the required learning activities and thus he/she will be motivated to use it in future. So it depends on the student's expectation and satisfaction to assess the system from its usefulness aspect." Experts 2 and 4 mentioned that if the e-learning system is set up to be compatible with students' needs, then it could be considered useful, and hence adopted and used effectively.

The respondents were asked about how reliable the current e-learning system is in terms of its efficiency, performance and security. The experts) confirmed, "A lot of work needs to be done to ensure that the current e-learning system is performing efficiently." Expert1 and Expert 3 added: "We can't guarantee the efficient performance unless it meets and achieves the two main objectives: ease of use and improved online learning services to students." Finally, the respondents agreed, "if the e-learning system meets the students' demands and they feel it is free of any risk then it can be depended and trusted." Expert 2 stated that: "Reliability is linked with the system's friendliness and usefulness from the user's perspective, and here it is important to mention that the current system can be called reliable when it reaches the maturity level in terms of usefulness and being free of threats."

(3) Culture factors According to the respondents, culture is a vital factor to increase the rate of e-learning system adoption among students. They stated, "Cultural aspects is one of the critical factors that needs to be addressed in order to ensure that all students will use the elearning system largely". ICT literacy is one of the key element that is deliberated by the Higher Education Authority as outlined by the experts: "One of the factors that should be implemented to increase the use of e-learning system is to increase ICT literacy and skills of e-learning users". They also outlined in this regard: "If the Higher Education Authority can't alleviate the illiteracy level, then it would become a barrier to achieving the strategic goals with respect to implementing e-learning system." Another factor that was extracted relating to the cultural aspects is the plan to transform Jordan to an 'e-Society'. The experts described this point as a very significant goal to achieve Jordan's Vision 2025. The experts outlined that "e-Society should combine all educational institutions together in order to receive a one entity working through e-learning system".

Another important factor is to be connected with students through different social media, as it is the main media and application used in Jordan. The experts stated: "Social media is the gentlest way to reach students and encourage them to utilize the e-learning system, and also let them use e-learning system directly from the social media applications. Social

media can help the universities to better react to students, and will increase students' engagement and improve the e-learning system eventually."

(4) Self-efficacy factors As noted by the respondents, self-efficacy is one of the core elements in determining the adoption of e- learning system in educational institutions. The experts stated, "In order to increase the adoption of e-learning system, it is important to ensure students in Jordanian universities have high self-efficacy in order meet the intended functions, otherwise it's hard to achieve the learning activities through e-learning system if students show low self-efficacy." In addition, the respondents recommended that self- efficacy is one important factor that needs to be considered through "Jordan's Vision 2020". He outlined "All Jordanian universities seek to ensure that all students and instructors use the elearning system and have full self-efficacy and skills to use the system with the end of 2020". The respondents mentioned that: "Training programs can play a significant role in ensuring high self-efficacy for both students and instructors, and for that reason universities should create some training programs for them to enhance their IT skills, and hence, become more likely to adopt e- learning system". The respondents confirmed that the awareness is key element that motivates the students to use the e-learning system. This factor helps to enhance the self-efficacy for users. They outlined, "The implementation of e-learning systems can't be carried out smoothly without having regular awareness sessions in order to let students feel confident and motivated in using the e-learning system."

(5) Trust factors According to the respondents, "Trust is a vital factor to increase the rate of e-learning system adoption in Jordanian universities". They said, "Universities are always attempting to assure that the e-learning system is trustworthy". The trust factor includes system protection, information privacy, and system reliability. They added "In order to increase the adoption of e-learning system among students, it is important that universities are always updating the security systems to keep the system fully secure from any types of viruses, and to assure that all learning activities are legally run based on the applied policies and privacy laws." In this research, the trust of the Internet is the key elements that can play a significant role in ensuring high trust for users. The experts indicated that: "The adoption of e-learning system relies on that software companies should have the necessary resources to implement electronic services effectively and are capable of securing such systems". In addition, they confirmed, "lack of trust will definitely result into an increase in resistance to adopt e-learning system". In addition, one of the important trust factors that lead to increase the use of e-learning system among students is providing efficient, effective and transparent means of e-learning activities through the e- learning system project, and can surely be secure and free of threats.

IV. RESEARCH METHODOLOGY

A comprehensive literature search was conducted on Internet to identify relevant studies. The search was restricted (search filter) to identify only studies published between the year 2020-2022. In addition, reference lists of studies identified from the initial search were used to retrieve additional relevant studies. The search terms used were Covid-19, coronavirus, online learning, E-learning, classroom learning and higher education. An inclusion and exclusion criteria was developed to select the most relevant articles for final review. Studies were eligible for inclusion if they addressed education E-learning and E- teaching during Covid-19, challenges and opportunities in the era of Covid-19, E- learning v/s traditional learning. Final selection for literature review was based on the abstract which should meet the following requirements: acceptable methodological standard, clear research objective relevant to the current study, published on accredited source (journal). Only articles available in full text were included for the final review.

V. CONCLUSION

In conclusion, the Covid-19 outbreak has introduced a lot of challenges for higher education institutions across the world. Lockdown and other Covid-19 regulations has forced a sudden shift from face to face learning to online learning in many academic institutions. While this shift was considered a possible solution to higher education crises in the era of Covid-19, it is shown in this study that this shift came with numerous challenges for students and academics. As discussed in this study, these challenges include; difficulties to adjust by lectures and students, connectivity issues, unconducive physical environment, mental health related issues, lack of basic needs, lack of teaching and learning resources.

Despite these challenges, this study shows that there are Covid-19 induced opportunities such as innovation and capacity development. There is lack of scientific research evidence on the impact of Covid-19 on academic outcomes. It is therefore recommended that further research should be conducted to measure the impact (shortterm and long-term) of

Covid-19 on academic outcomes. Public health disasters such as COVID-19 can encourage innovation and create out-of-the box thinking in educational settings. To be able to provide meaningful and engaging learning experiences to students, instructors and academic administrators have to focus on building appropriate infrastructure to support hybrid and blended learning methods. It is extremely important to focus on capacity building of faculty so they become more familiar with online learning approaches, e-Learning tools, and usage of innovative technology to facilitate teaching and learning. High level of emergency preparedness is also needed so faculty, administrators, and students can quickly adapt to changes that are beyond one's control. This preparedness will require resource allocation to deal with mental health challenges and additional training in pedagogical methods so teachers can build relationships and work towards enhancing social presence, teaching presence, and cognitive presence even in online medium of instruction. Besides integration of technology in classes, efforts should also be made to include rigorous quality assurance methods (i.e., Quality Matters) and continuous quality improvement as this will allow faculty to think about changes that could be made to further enhance teaching and learning.

The results of the present research show that, among the studied population, there is a greater preference for face-to-face learning compared to e-learning. It should be noted that this preference is higher among those who benefited in their formation process only from e-learning and lower among those who benefited also from face-to-face learning. These results are further confirmed by the fact that more than half of the respondents stated that they wanted to return to the classic teaching format after the pandemic ends.

As mentioned above, the desire is stronger among those who only benefited from e- learning during their studies. E-learning, like any form of education, also has its own set of positive and negative aspects. Decoding and understanding them will help educational institutions to create strategies for more efficient delivery of educational content to the beneficiaries of this process. Regarding the positive aspects of e-learning, the research has shown that students are particularly pragmatic, considering time- saving as the main advantage, closely followed by the comfort offered by staying home, as well as the accessibility provided by the online environment. The same positive results, such as the possibility to stay at home, the friendly environment at home, and the possibility to have access to online materials were observed in a study conducted with Polish medical students .

These advantages could help create courses that fit the needs of certain categories of students (those who work, who are unable to attend courses, who cannot afford to study in another city, etc.). In this way, students would be given the opportunity to complete educational tasks at their own pace, within a defined time horizon that would allow them to consider them deeply and critically. As for the negative aspects, the main shortcoming of e-learning compared to faceto-face learning detected by the students of the present study was the lack of interaction, particularly the lack of socializing with their peers. It is important to know that interaction with peers is so important for students and that face-to-face learning cannot disappear completely, but it can eventually be complemented by e-learning. This perspective is also suggested by another study in the field, which supports the idea that socialization is basic for students both psychologically and in terms of carrying out common activities, such as projects.

Another disadvantage that emerges from the present study is represented by the technical problems encountered in the connection. These two main disadvantages are reinforced by several studies conducted with students from other Romanian universities in the same pandemic context. Moreover, a noteworthy disadvantage pointed out by the present research was the lack of practical applications, which proves once again that e-learning cannot be considered a long-term solution for all fields of study (e.g., engineering), some of which require face-to-face interaction in order to provide adequate practical knowledge.

Similar disadvantages were also found in another study conducted with agriculture students in India, who considered the lack of Internet connection in rural areas and the lack of practical applications necessary for their field of study as serious impediments to their educational activity

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