E-learning performance assessment during COVID-19

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Abstract: The COVID-19 epidemic has accelerated the spread of online learning across all levels of education. In light of the risk of being unable to restart face-to-face education, countries have sought to extend their use of distance education and make it obligatory. The most commonly mentioned downsides are technical difficulties and the inability to access the system as a consequence. When comparing face-to-face and online learning methodologies to conventional learning, we believe that online learning has the ability to compensate for any limits imposed by pandemic circumstances. Assessment, in some form or another, is important to the educational process. It has a tremendous influence on how well students understand and implement what they are taught. Without settling on an evaluation method, the curriculum planning would be incomplete. Cheating for the first time went up, cheating online was more common than cheating in person for most graded items, and students were good at getting around anti-cheating methods. Most academics think that writing tests after COVID-19 should be made better. The authors argue that schools should accept distance education as an adjunct to traditional classroom instruction so that they may easily make the necessary changes when necessary.

Keywords — COVID-19 Pandemic, perspectives , E-learning strategies,assessment , Online testing, online writing assessment,Cheating (education), Challenges of e-exams.

I. INTRODUCTION

The COVID-19, a disease caused by the coronavirus, was first identified in December 2019 [1]. It was officially declared a pandemic in March 2020 due to its rapid global spread. Due to the significant consequences of rapid development, businesses of many types are compelled to transition their operations to an online format. This unprecedented problem impacts all levels of education, including institutions of higher learning such as universities. Currently, there is a mandatory shift towards online learning, replacing traditional on-campus, face-to-face education. Many governments have implemented this as a compulsory measure.

E-learning systems, such as a learning management system (LMS), offer a platform for learning that allows for interactive study anywhere with an Internet connection. In addition to providing course materials, a well-designed e-learning system also makes it easy to administer tests, have discussions, and share ideas with classmates. Efficient and effective e-learning resources are often cited as a potential replacement to traditional, offline methods of instruction. The extensive dependence on e-learning is a challenge for institutions, students, and instructors, considering the increasing significance of e-learning among the pandemic.

Online tests eliminate the need for teachers and faculty members to spend time and effort on correcting answers. This is a result of the auto-correction system, which decreases the necessity to do so. Online assessments allow educators to establish an academic profile for each student by recognizing their individual weaknesses and strengths. They provide students with opportunities to be evaluated objectively, because the students' scores on the e-exam will not be altered by any biased instructor. Furthermore, e-exams allow teachers to quickly and easily generate reports on students' grades. Such evaluations include information about pupils' problems and strengths. They allow curriculum developers and policymakers to identify which elements require more attention. They allow teachers to personalize the learning process [2].

As a result of the global spread of the COVID-19 virus, many universities around the world have implemented new methods of instruction and assessment to reduce the potential for harm to their faculty and students. As online testing has become more commonplace, discussions have arisen as to whether it poses a greater threat to students' honesty than traditional exams given in a classroom setting. It is likely that online testing will continue to grow in popularity. There are advantages and disadvantages to this trend in terms of evaluating student achievement in higher education. Hence, it is crucial for educational research and practice to prioritize the extensive adoption and thorough evaluation of measures that reduce cheating by increasing accountability or introducing more complex tasks. Additionally, it is important to address academic norms that might impede the adoption of novel examination methods, such as essay questions and collaborative exams [3].

II. LITERATURE REVIEW

• E-examination performance issues under COVID-19

According to COVID 2019, online learning is now an option for students who want to gain new skills while also using the latest in educational technologies. An e-exam is an innovative approach to e-learning that seeks to address traditional assessment issues as a practical contribution. Specialized software generates a sequence of inquiries to evaluate an individual's capabilities. Despite thorough investigation, e-examinations continue to face challenges, such as the authentication of test-takers' identities and the precision of their responses. This study aims to present the experiences of educational institutions in various countries about the use of e-exams and e-evaluation as essential tools in e-learning. Based on this study, it is recommended that students be assessed

through continuous evaluation, which includes e-examinations supported by authentication measures. This approach can help in identifying, mitigating, or even preventing student misconduct during the global COVID-19 pandemic. Based on the results, Moodle and proprietary solutions were the predominant Learning Management System (LMS) technologies, constituting 75% of total LMS usage. Other commonly used LMS programs include Blackboard and eFront. Open source and proprietary software are more popular in developing nations since they are free. Most e-exam facilities had problems with internet speed, cost, and legitimacy, which were 99 percent, 82%, and 68%, respectively [4].

During the COVID 19 crisis, a researcher examined the usefulness of online tests for grading students in human sciences faculties at Emirati private institutions. For the purpose of examining this, he employed a questionnaire in conjunction with a descriptive analytical technique. He created the survey on Google Forms. After that, he verified the questionnaire's content validity and reliability. 500 female and male students received an email with a link to the survey, which he forwarded. During the aforementioned crises, a select group of Emirati students from five private institutions in the humanities was hand-picked. Ajman is home to two prestigious universities. Al Ain, Dubai, and Abu Dhabi each sent a school to the conference. Each of the five colleges was selected for a specific reason. There were 192 forms completed. A total of three forms were removed because they were filled out by students enrolled in scientific institutions. Thus, SPSS was used to examine 189 forms. ' According to the study, the usefulness of online examinations in evaluating pupils targeted during the COVID 19 crisis was determined to be high. Exams like this may help students improve their academic performance and give faculty members with information on the issues and weaknesses that students have in academic areas and the progress they are making. Cognitive, problem solving, and time management abilities are all improved as a result of these classes [5].

As the COVID-19 epidemic spread, researchers wanted to see how many Ajman University undergraduates were comfortable taking their examinations online. The research was done in a descriptive manner. Students in the class of 1986 were asked to complete a survey consisting of 27 questions. As a consequence of the COVID-19 pandemic's spread, undergraduate students were found to have moderate acceptability of the use of e-examinations, with females considering them more acceptable than males. Students in Pharmacy & Health Science College and those in their third year of study were found to have the greatest levels of acceptance, as were those in their second and third years of study. As a result of the findings, people are more aware of the significance of resolving issues like the tight computer technology requirements that come along with e-exams [6].

Schools are now required to provide virtual education because of the Covid-19 epidemic. Each and every university in Turkey has finished its spring semester utilizing online technologies. However, most of these schools were not prepared to provide all of their courses online. Lack of suitable online tools, teacher and student inexperience in remote

education and technical deficiencies have arisen as important difficulties that institutions must deal with in this new era of education. As a new question came up, what methods would be utilized to evaluate students. An investigation on the most prevalent assessment methods used during pandemics, as well as how students rated their performance, was conducted in this research. The quality of the assessment was also investigated to see whether participants had a different opinion based on whether they interacted with professors or took online examinations. A three-part instrument was utilized to capture both qualitative and quantitative data as part of the survey design. More than 400 students from 61 colleges and institutions volunteered to take part in the research. Student satisfaction with assessment techniques is typically high, and results-based assignments are the most often employed tools. In addition, students who engage with faculty members report higher levels of satisfaction with the assessment processes as a consequence of their involvement. Formative evaluation and feedback are critical in remote assessment, as seen by this. Online test takers are also happier with the assessment's standard of accuracy and fairness [7].

Considering that this was a first for examinations to be given through distance education at the Maria Grzegorzewska University during a pandemic crisis, the article offers the results of a survey given to students after the first and second test sessions to students and professors (Warsaw, Poland). It is possible to save time (immediate access to results and variable exam dates) while also enhancing the organization's efficiency by administering examinations remotely. In a friendly environment, students say they like the simplicity of completing the test and the chance to obtain results quickly and spend less time on the exam. With remote exams, there is no control over students' personal and professional integrity, high- or low-test difficulty, or deficiency in their test outcomes. Exam-related technology issues are seen as quite important in both categories. 20% of students admitted to using unauthorized help to cheat on tests and exams. Students' reliance on academic teachers can be reduced through the selection of an appropriate exam form (problem tasks, oral exams or open-ended questions, test variants), the use of special strategies (comparing students' work, control questions and looking for parts of final papers on the Internet) and technical solutions. Teachers in the academic field (requirement of turning on the camera, checking the metadata of files, the need to document work) [8].

The Covid-19 pandemic, which started in the second semester of the 2019/2020 school year, had a big effect on how people studied in higher education in Slovenia and around the world. There was a sudden switch from teaching and learning in person to teaching and learning online. This change was made possible by digital platforms like Moodle, Zoom, and MS Teams, as well as exam apps like Exam.net. Students' formal and informal interactions with their peers, formal and informal interactions with their teachers, and the students' psychological needs for belonging, competence, and independence were all affected. In a sample of 110 first-year students from different study programs at the University of Ljubljana, Faculty of Education, the authors looked at how certain study methods and

tasks helped the students develop their skills and how difficult they were for the students during the Covid-19 pandemic. The authors also looked at how the students thought the online exam process worked. The results showed that the adapted teaching and learning methods and tasks helped the students improve their skills and that they learned the new skills they needed for online exams. Also, different problems with studying and tests were brought up and looked at. Even though online teaching and learning works well, it can't replace face-to-face learning, especially in pedagogy departments where university teachers are important role models for future teachers [9].

This study sought to validate students' and faculty's experiences with e-learning amid the present epidemic. From February to June 2020, a cross-sectional investigation was undertaken. Seven questionnaires were issued online to all undergraduate students and professors at Southern Medical University (4 to students and 3 to instructors) (China). Descriptive statistics and t-tests were employed to analyze the data. Statistical significance was defined with a significance level of $p < 0.05$. Outcome: Before the implementation of the all-e-learning program, the majority of students had some level of experience with e-learning, whereas more than 90% of teachers had minimal or very limited knowledge in this area. In general, students' assessments of the most beneficial e-learning activities showed little variation between Week 3 and Week 9. Approximately 60% of students in Week 9 reported that they considered the online discussion /Q&A/ forum to be advantageous, which is a significant increase from the fewer than 30% who felt the same way in Week 3. Week 9 focused on identifying gaps in the implementation of e-teaching activities and assessing the effectiveness of these activities as seen by teachers. Although pre-recorded lectures were the most commonly used method, live-stream lectures had the smallest discrepancy and were the least utilized. Overall, teachers' perceptions of the efficacy of e-teaching vs. in-person instruction did not alter substantially over time. When the findings from students (Week 7) and teachers (Week 9) were compared, a little larger number of teachers thought online teaching was less successful than in-person teaching, and a slightly higher percentage of teachers said online teaching was significantly less effective. Students' choices for preferred learning modalities following the restart of in-person learning did not alter substantially generally (Week 3 vs. week 9). According to surveys performed in Week 9, a somewhat greater proportion of students (70 percent) than instructors (60 percent) favored certain types of hybrid learning, while a smaller percentage of students selected just face-to-face learning. Approximately three-quarters of professors indicated that at least half of course content could be mastered by pupils on their own. Overall, the perceived efficacy of e-learning among students and instructors has not changed considerably over time. Neither have students' choices for different learning mediums moved considerably once in-person learning resumed. However, useful directional patterns have formed. The study demonstrates experimentally the necessity to confirm students' and instructors' experiences over time in order to inform more comprehensive e-learning advances [10].

To determine how well the COVID-19 pandemic has prepared medical students for their future careers. In April 2020, researchers from the School of Medicine at the University of Jordan performed a cross-sectional, self-reported questionnaire survey. There was a specific target audience of students at the medical school. In order to conduct an online survey, Google Forms was used. In order to measure student satisfaction and knowledge acquisition, an independent-samples t-test was used. It was completed by 1000 medical students, with 506 (50.6 percent) students in fundamental science and 494 (49.4 percent) in clinical science taking part in the polling. 655 of the students were either pleased or indifferent with e-learning, which is 65.5 percent of the total number of students. Students in the fundamental scientific and clinical fields reported that they were able to absorb and retain information in the same manner or better than before the introduction of e-learning. There was a substantial correlation between student readiness, instructor effectiveness, and website accessibility (p 0.000) when it came to satisfaction and knowledge acquisition. Traditional classroom teaching will have to be replaced by online or hybrid learning in the future. Students in our study were generally pleased with e-learning and the information they gained as a result of their experience. Students, professors, and the medical school were all shown to have a substantial correlation between their level of satisfaction and their readiness to practice [11].

The COVID-19 pandemic has accelerated the growth of online learning at all educational levels. Faced with the risk of being unable to restart face-to-face education, governments have sought to extend and make the use of distance education obligatory. The most often reported downsides are technical challenges and the resulting inaccessibility of the system. Prior to the epidemic, there was growing interest in distance learning as a novel teaching approach. The purpose of this mini-review is to determine how students perceived distance learning during COVID-19. To that end, articles from the ERIC database were gathered. In our searches, the authors employ the phrases "remote education," "university," and "COVID." There are currently 139 articles. The authors picked papers having "full text" and "peer-reviewed only" portions. As a consequence of the exclusion, 58 items remained. Then, using content analysis, articles relating to students' viewpoints on distance learning were uncovered. The final list included 27 articles. Students' viewpoints on remote education are divided into four categories: views and attitudes; benefits of distance education; downsides of distance education; and distance education concerns. All investigations used online data gathering approaches because of pandemic restrictions. Using surveys and questionnaires to acquire data When students are asked to compare face-to-face and online learning methods, they believe that online learning can compensate for any limitations presented by pandemic circumstances. Students' perceptions and levels of satisfaction vary from positive to negative. The flexibility to study at any time and from any location is one of the benefits of distant learning. Both achievement and learning benefit from distance education. It is safer and less stressful for students to stay at home during pandemics. Distance education exacerbates a range of physical and psychological health issues,

including fear, worry, stress, and difficulty focusing. As a consequence of the pandemic's quick shift to online education, some schools lack adequate infrastructure. Future academics might investigate whether online teaching approaches could be used to reduce student anxiety [12].

During the COVID-19 outbreak, teachers utilized E-Assessment to track students' progress. During the COVID-19 outbreak, educators had to cope with the difficulties of adopting E-Assessment. Using a literature review approach, the researcher presented the challenges, advantages, and downsides of E Assessment. According to the results, teachers utilized Google Forms and Google Classroom to examine their students' online work. The researcher, on the other hand, found out why the teachers used these tools. Instructors and students alike found the social networking app's features easy to use and familiar. A variety of issues challenge teachers who want to assess their students online. Online assessment was a source of worry in this research because of issues with misinterpretation of instructions, poor internet connections, and the inability to revise, especially for essay questions. Students who were encountering problems with their internet network connection got assignments from their instructor over WhatsApp in the form of Microsoft Word. It is simpler for the instructor to correct and analyze multiple-choice questions than essays. In addition, the instructor set a deadline for pupils to turn in their assignments in order to prevent them from plagiarizing [13].

After the COVID-19 pandemic's restrictions were eased, the issue of distant learning continues to remain relevant. Due to the fast evolution of educational technology and the need for instructors to stay abreast of the latest advancements, distance learning places an even larger burden on them, increasing their workload by requiring them to dedicate more time to creating materials that promote effective learning. The study's goal is to identify instructors' usage of the most successful methods for arranging distant education. Professors who were tasked with teaching classes via the internet between 2020 and 2021 were asked to participate in an informal poll. An examination of the limitations and benefits of distant learning is conducted in order to identify the best and worst aspects of the system. The research uncovers previously unseen concerns that developed throughout the course of quarantined workers' remote employment. A few of the most pressing of these include the excessive physical demands placed on instructors, the many technological issues that occurred during the shift to online instruction, the severe shortage of teaching skills, and the difficult coordination of the educational process itself. The authors suggest that the system of distant learning may and must be accepted and further developed as an extra supporting direction in the structure of the learning process, allowing educational institutions to quickly change to distance learning as required [14].

Since mid-March 2020, the coronavirus disease 2019 (COVID-19) has been labeled a worldwide pandemic by the World Health Organization. Inevitably, the epidemic has had an influence on the nation's social and economic activities, including schooling. Learning activities have been forced to relocate online as colleges have been compelled to shut their

campuses by the governments. The so-called "new normal" modes of learning may be challenging for university administrators, professors, and students to adjust to given the current scenario. The uniqueness of this circumstance necessitates an examination of the difficulties experienced by academic institutions, faculty members, and students alike. The first step in this research is to do a literature evaluation on the difficulties of e-learning in a pandemic setting. A taxonomy of e-learning issues during a pandemic is then created using the inductive theme analysis approach. Students face connection, e-learning system support, and technical and self-regulation challenges, according to our research. Lecturers, on the other hand, are confronted with problems related to their abilities, operations, self-regulation, and solitude. Institutions, on the other hand, say that getting financial assistance and managing change are difficult tasks. The findings of this study point to the need of more research to overcome the aforementioned difficulties in online learning [15].

During the COVID-19 epidemic, academic institutions are quickly converting all educational activities to the electronic format. At Qassim University in Saudi Arabia, the College of Medicine, we have implemented a series of concurrent online teaching and assessment procedures. We also looked at how e-learning and evaluation affect student and faculty performance, as well as the difficulties they face in remaining relevant. In this descriptive cross-sectional study, we documented the frequency and duration of various online educational activities during the COVID-19 epidemic. Teachers and students were given instruction in the use of virtual classrooms and online evaluations. An e-assessment committee that was recently formed has set up a variety of online tests. It was possible to compare the average problem-based learning (PBL) grades of the same students in person or online. A student satisfaction survey and an online staff focus group about online learning experiences were undertaken, and weekly staff perception reports were created. After that, it was time to dig into the data. Over the course of 994 hours, 620 virtual classrooms were successfully established, including theoretical lectures, PBL sessions, seminars, and tutorials. For female students, the mean PBL grades rose significantly during the online sessions. 58.82% of the students and staff in the first year expressed great satisfaction with virtual classrooms, online assessment, and online workshops. Electronic assessment and e-learning are the focus of this investigation. For the first time, we noticed a significant increase in student achievement along with positive feedback from staff members. According to these findings, more online medical courses should be offered in the future [16].

Many colleges have turned to online instruction after the COVID-19 epidemic broke out in Spring 2020 as a last resort. Academics' pedagogical experiences during this era of institutional change will be examined in this qualitative case study, which is informed by activity theory. Following government directions in February 2020, a national university in South Korea launched a swift online transformation and gathered a variety of qualitative data. As a result of the adoption of online teaching, the university's linked instructional activity

systems underwent significant changes, and this essay sheds light on the many complicated elements that contributed to these shifts. Academics, the primary focus of the activity systems, were confronted with a slew of paradoxes as a result of the abrupt change in institutional instructional activities and circumstances. According to the findings, university instructors who were classified as rookie online teachers or experienced online teachers were confronted with two distinct sets of problems. Lessons from this research include the need for a more comprehensive, realistic, and compassionate approach to emergency teaching situations that might help educational institutions better react to similar catastrophes in the future [17].

There is a lack of data to support the use of effective online assessment techniques in Higher Education Institutions during pandemics, despite the benefits of online learning. It was the goal of this research to summarize and offer trustworthy and practicable online evaluation techniques during the COVID-19 epidemic at higher education institutions. Prior to the COVID-19 epidemic, we conducted a scoping literature analysis to locate original studies, reviews, and reports that addressed online assessment methodologies utilized in higher education. Data analysis revealed a number of similar threads. Medical education is a good example of an area where psychometric theory may be used to build accurate and effective online assessment techniques. HEIs often employ online quizzes, continuous feedback, multiple-choice questions, and automated evaluation for essays in their online assessments. Feedback, self-test quizzes, and discussion forums are examples of online formative assessment techniques in higher education. Using free software to create online questions and free video conferencing tools like CCTV on mobile phones for invigilation are two of the most important tactics for handling online exams. Online assessment in higher education institutions (HEIs) necessitates careful consideration of students' preparation, cheating patterns, and the variety of pupils. Online learning and evaluation approaches might help individuals better prepare for global risks, such as the COVID-19 pandemic, which they may face in the future. Educators must also assess the efficacy of various teaching strategies on the progress of their pupils [18].

Because of the COVID-19 outbreak, many educators are worried about the impact on student learning if face-to-face education is temporarily suspended. A lack of data has made it difficult to investigate this subject. Primary school performance is evaluated here using data from the Netherlands (n = 350,000) that is extremely rich in detail. National exams were held before and after lockdown, so the authors can compare this time to three preceding years in terms of advancement. Due to a fair school financing structure and the world's highest percentage of internet connection, the Netherlands was only shut down for eight weeks during its last shutdown. Even so, the authors found a 3 percentile-point or 0.08-standard-deviation decrease in learning from our experiment. For the same length of time that schools were closed, this had the impact of one-fifth of a school year. Because pupils from lower-income households are at greater risk of contracting the disease at higher rates, the spread

of the pandemic is likely to be more unequal. Investigating the processes reveals that the majority of the effects reflect the cumulative impact of information learned rather than short-term effects on the testing day. When balanced on treatment propensity and using maximum-entropy weights or fixed-effects specifications that compare pupils within a single school and home, results remain strong. According to the data, pupils who studied at home made little or no progress, and losses are significantly greater in nations with insufficient infrastructure or extended school disruptions [19].

For this reason, India's government has declared COVID-19 pandemic and enforced a lockdown throughout the nation. During the crisis, almost every industry has had to deal with hardships, and education is no exception. Teaching and learning over the internet were the first step in implementing the digital paradigm of education. For the period of the epidemic, this document gives a summary of schooling. During a pandemic in India, online education presents both possibilities and problems for stakeholders. Methodology/Design/Approach — The study examines previously published and unpublished papers, articles, and secondary sources in-depth. Observations – It was found that the Indian government has made significant efforts to offer educational content for students of all ages through free digital platforms. Major obstacles to online learning include limited internet connection, a lack of educational institutions' ability to establish enough infrastructure and resources, and a shortage of instructors with the necessary training. It is possible that the outcomes of this research may help universities and instructors redesign their educational pedagogies to meet the difficulties of online and blended learning and be better prepared to cope with any future crises that may arise. There have been a lot of studies on crisis education, but only a few studies have been original or of high value [20].

- **Exam cheating during the COVID-19 pandemic**

As a result of the COVID-19 health crisis, universities all across the world will be administering exams online in 2020. Deliberations continue over whether this change has made it simpler for pupils to cheat or not. The authors looked at whether online tests were connected with higher rates of academic dishonesty and if students cheated more often on them than on-site exams. The authors conducted a survey of 1608 German students from a range of higher education institutions in order to answer our study questions. There were more instances of pupils cheating on online tests than in person, according to those who participated in the study. Academic dishonesty metrics were not affected by this intervention. That ad hoc online testing in 2020 has had harmful effects on academic integrity is supported by these findings [3].

Unprecedented changes in classroom teaching and student evaluations were brought about by the COVID-19 epidemic. Students' cheating behavior before and after the COVID-19 epidemic, as well as variables that may have contributed to an uptick in cheating, were all investigated in this research. Researchers also looked at students' attitudes towards cheating and how they dealt with it. One hundred fourteen psychology majors (N = 214) from a public land-grant institution in the

Southeast United States took a survey at the conclusion of the Fall 2020 semester of their own free will. First-time cheating rose, cheating in online classrooms was greater than in-person classes for most graded items, and students were skilled and flexible in dealing with faculty efforts to fight cheating. Cheating was the most common reason students gave for doing so, and those who had done so reported feeling "relieved" the most [21].

Higher education has seen an increase in the use of contract cheating of late. It was during the COVID-19 epidemic that the rate of contract cheating pupils soared to record heights. Essay mills seized on the absence of face-to-face contact and proctoring on campus as an opportunity and employed aggressive marketing strategies to recruit students. In this research, 20 English faculty members from private Kuwaiti universities were interviewed about their perspectives on contract cheating. Analyses were carried out using MAXQDA 2020 software. Students can quickly identify contract cheating, according to the results. Most of them believe that contract cheating is a real issue in the higher education system, a danger to the credibility of language evaluation, prompted by laziness, the social pressure to graduate with a good GPA, and aggravated by the cheating chances in online education. Contract cheating has been a problem for some time, and academics have devised a variety of techniques to combat it. However, some institutions do not have any safeguards or consequences against contract cheating students [22].

This year's Middle Eastern COVID-19 epidemic was primarily intended to gather data on coordinated group fraud. EFL program graduates from Saudi Arabia's King Fahd University were interviewed in-depth for this research, and their responses were analyzed. We based our findings on Ajzen's concept of purposeful conduct. Recently, researchers have uncovered and begun studying a brand-new kind of crime: systematic group e-cheating. In addition, specifics on the forms and causes of Middle Eastern e-cheating were offered. Technology, societal conventions, and larger cultural trends have influenced students' conceptions of morality, leading to a rise in academic dishonesty. Educators need to understand and confront the underlying causes of unethical behavior, as well as the negative ideas about ethics that permeate our society. Academic dishonesty in e-learning should be taught to instructors via thorough professional development programs. Our academic degrees will lose their worth unless the societal, cultural, and perceptual challenges related to the growing use of technology in education are addressed [23].

- **Online Written Exams During Covid-19 Crisis**

The study focuses on the issue of conducting online written examinations at the University of Milan, which was shut down due to the Covid-19 situation. The main purpose of this study is to illustrate and compare the many scenarios envisioned, depending on the number of students to be watched in parallel to prevent cheating. With a small number of students, direct monitoring by the instructor has been recommended, with various aids depending on the test style offered by the teacher (open vs. closed answer questions, presence of handwritten

parts). After several comparisons between two commercial options, a proctoring system has been chosen for bigger numbers of students. The results demonstrate that a system enabling professors to watch pupils answering open questions on their home computers in real time has been widely adopted [24].

The teaching process revolves on assessment in some form or another. It has a significant impact on how well pupils comprehend and apply the material they are taught. Planning your curriculum would be incomplete without deciding on an assessment technique. With this change from face-to-face learning to full-time online learning, a number of issues occurred, including how to construct an online writing evaluation for student use. The online examination of students' work, in particular, has become an unusual new circumstance for many English professors. For many English professors, making the switch from face-to-face assessment to online assessment was a new experience. They had no prior experience with it and had no idea how it worked. The problem has presented a significant point for English teaching practitioners and course designers in terms of the techniques and difficulties of this mandated style of evaluation. The purpose of this paper is to give an overview of online writing assessments during the COVID-19 pandemic, including the challenges that lecturers face when giving online assessments and a set of recommendations for designing online assessment mechanisms and strategies that will lead to a fair assessment process for everyone. As a consequence, it is essential to take into account the perspectives of everyone involved. Students, teachers, and legislators must work together to enhance the quality of online assessments. Academic institutions must ensure that a reliable remote proctoring system is available, teach lecturers on different online assessments and instruct them to employ a range of assessment techniques, and educate students on academic integrity in light of the above debate [25].

Writing teaching and assessment in a second language (L2) need a comprehensive structural approach to improve students' L2 writing and provide an authentic and fair evaluation of students' L2 writing performance when done remotely online. Because of the COVID-19 epidemic and the goal of the investigation, a convergent parallel mixed methods strategy was used in this study. This research design may help answer the issue of what effect full-mode online teaching has had on L2 education. EFL instructors in Saudi Arabia were asked to fill out a 30-item questionnaire on a five-point Likert scale in the survey portion of the study. A semi-structured interview with nine EFL instructors (four men and five females) lasted between thirty-five and fifty minutes in the qualitative portion of the research. A thorough quantitative and qualitative primary data analysis revealed that EFL instructors are aware of the relevance of rubrics and structured assessment methods in providing fair scores to students. Teachers also emphasized the benefits of teaching online L2 writing from a distance, including the following: There is still a need for an improved approach for post-COVID-19 writing evaluations, according to the great majority of instructors. Students should be required to be present in person for writing exams in order to ensure that

students' performance is authentic and to allow teachers to monitor all students while they take their exams, as well as to ensure that all students are able to take their exams in a timely manner [26].

- **The Case for Automated Essay Scoring (AES) in COVID 19 Pandemic**

After the 2019 SAR COV-2 pandemic, contactless has become the new standard in most workplaces as a protective measure against hazardous coronavirus exposure. Similarly, in higher education, there are a variety of situations when contact presents a danger. Assignments, tasks, research findings, and other sources may be used to write essay scripts. University mitigation toolkits should include an automated essay scoring method called "Automated Essay Scoring" (AES). A scoping evaluation of AES products and methods of distributing them was conducted. In order to perform this study, the authors used a Prisma flow sequence to search and choose relevant material from six different databases. A wide range of AES products and literature, as well as different research designs, were all taken into consideration. The findings of the literature reviews varied when it comes to using AES essay scoring at a higher education institution. The COVID-19 pandemic calls for the use of AES with triggers for human rater engagement in rare cases in order to achieve contactless human-material interaction [27].

- **How COVID-19 changed online learning in various countries**

Worldwide, academic institutions have had to modify their teaching and assessment practices in light of the implementation of the COVID-19 assessment framework. Exams at several Spanish colleges now take place online, giving students new ways to violate academic integrity. A search engine data analysis approach is used in this work to assess the number of queries for information on test cheating in Spain during the pandemic adjustment period. The research makes the case for a broader use of Internet data analytics as an approach for studying academic integrity. Google search engine activity data on test cheating in Spain was gathered and analyzed over the five-year span from 2016 to 2020, inclusive. Many students are looking for knowledge on how to cheat during examinations, including the creation of cheat sheets. Requests for information on cheating on online examinations increased significantly during the COVID-19 period and the Spanish shutdown period. Academic institutions in other locations should be on the lookout for test fraud potential, given the results [28].

Coronavirus sickness (COVID-19) has shaken the globe and forced governments to establish a state of emergency, including the school sector. Due to a lack of transportation, students have been forced to stay in hostels or private homes. University administrators have no choice but to develop an online learning environment as a consequence of this situation. Saudi institutions, in particular, have encountered significant challenges in implementing online learning technologies in order to carry on the educational mission. For their part,

students found it challenging to deal with the demands of online learning in general, much alone the whole course load. Students, it seems from the results of the literature review, had a tough time overcoming their issues. To find out what difficulties first-year university students experience, this research set out to conduct a survey. A total of 234 valid replies were received from the participants in this study. Participants' responses show that they weren't physically, environmentally, or psychologically ready for this circumstance. There were also differences in responses based on gender and age. Respondents expressed worry about the impact of lockdown on academic performance. Changing to an all-online program might pose considerable difficulties for students, according to one study. When it comes to replacing the current blended learning paradigm, which makes use of online learning to supplement in-person education, it has been shown to be especially problematic for students who aren't well prepared [29].

Because of the COVID-19 epidemic, educational institutions worldwide have moved quickly to keep classes running smoothly and protect their students' health. The goal of this research is to examine the e-learning experience of Jordanian university students, as well as their e-learning preparation throughout the epidemic. Even though each institution is unique, we intend to provide light on how students' e-learning experiences were throughout the epidemic. Following the distribution of a structured online questionnaire, a descriptive analysis was carried out. Students from outlying and underserved communities had a particularly difficult time adjusting to college due to the lack of technology resources, slow internet, and terrible living conditions. Distant learning is being transformed by internet commerce, as this research shows. Further expenditures and contingency preparations are required to build a robust education system that supports electronic and distant learning in Jordan [30].

COVID-19's negative impact on Saudi Arabia's education system is the primary focus of this research (KSA). It is unlikely that there was any alternative strategy in place to limit the effects of the coronavirus on schooling other than using remote learning. The study investigates whether or not online/distance learning courses are beneficial. Teachers and students were asked to describe their experiences with COVID-19 in terms of the problems they encountered when studying through virtual mode, the only alternative e-learning technique available at the time. As a result, it's worth noting that the Deanship of Distance Learning at King Abdul-Aziz University (KAU) has been employing e-learning/blended learning for more than a decade, although in a different context. Educators and students were surveyed using two different forms of data collection (adapted). As a majority said, they were pleased with the benefits of E-learning. The researchers discovered that many students were willing to switch to an online learning environment in order to avoid falling behind in class [31].

- **Online Exams During COVID-19: Teacher's Perspective**

Background and Aims: The World Health Organization (WHO) proclaimed COVID-19, a highly contagious illness, a pandemic on March 11th, 2020. There was a statewide

lockdown because of the COVID-19 outbreak, and schools were forced to close. They were forced to use an online learning platform. The study's goal is to find out how instructors feel about holding E examinations in the middle of a pandemic. In order to get a better understanding of e-exam effectiveness, advantages, and issues instructors confront while administering the tests, the study set out to collect data. All physiotherapy and management faculty members were sent a Google form with a self-created questionnaire. More than 40 instructors responded, and their replies were then analyzed to see whether there were any advantages or disadvantages to using e-exams. Teachers have to put forth a lot of effort to administer online examinations. In addition, they encountered several problems with network access and lacked the requisite technical expertise to carry out assessments. A lack of genuineness and poor presenting abilities were also evident in the test responses given by pupils. Instructors would prefer offline examinations in the near future, and the exams were neither too simple nor too tough for the teachers to administer [32].

It's well-known that in extreme cases, matching processes are unavoidable. Student evaluation and assessment plans or procedures have also evolved over the COVID-19 period, as face-to-face teaching methods have changed. An investigation of how COVID-19 affects online testing at Jordanian universities is the focus of this paper. University professors were asked to complete a five-construct Likert-type questionnaire with 20 questions and returned it to researchers. Incorporating these elements was the internet and technology, as well as logistical and technical concerns. Testing conducted online would be impossible without the Internet and other modern technologies. Another finding from this research was a correlation between computer-based testing and a decrease in the prevalence of online cheating. E-learning methodologies and processes, as well as online test preparation and administration, should be taught to teachers on the job by higher education institutions [33].

• **Online Exams During COVID-19: Students' Perspective**

The main goal of this study was to find out how students at Princess Sumaya University for Technology (PSUT) in Jordan felt about online tests when the COVID-19 pandemic was going around. The researchers used a method called "description." PSUT has a total of 3446 students, and 862 of them were chosen to fill out a questionnaire with 22 questions. The data were looked at with SPSS. The results showed that undergraduate students were very open to taking tests online during the COVID-19 pandemic. The results also showed that the degree of acceptance of online assessments varied by college (with the School of Computing Sciences being the most accepting) and by computer skills (in favor of students with moderate computer skills). Lastly, according to the gender variable, there was no statistical significance [34].

The pandemic COVID-19 illness first appeared in Wuhan, China, towards the end of December 2019. It quickly spread and now affects other regions of China. Wuhan officials closed down the city on January 23, 2020, to prevent the spread of sickness. Within a few weeks, COVID-19 instances were

discovered in numerous more nations, making it a worldwide menace. On June 6, 2020, there are 115,942 active COVID-19 cases in India. Educational institutions have been shuttered in order to interrupt the cycle of infectious illness transmission. All schools/colleges/universities have postponed or cancelled all campus events such as tests, seminars, conferences, admissions, and other activities due to the COVID-19 epidemic. The primary goal of this research is to determine the influence of COVID-19 on education, to investigate student perceptions of online education during the COVID-19 crisis, and to investigate student perceptions of COVID-19 sickness. A systematic questionnaire was used to gather data from 100 students in Tirupati. The research uses both primary and secondary data. To gather data, the most convenient sampling approach is chosen. The results are analyzed using SPSS software, and the conclusion is that the majority of respondents are pleased with online education, and the majority of students want to continue their education online in the future. The pupils' biggest issue is a lack of network connection. Canvas Instructure is used for online courses by 45 percent of institutions in Tirupati. In the current crises, an effective and well-rounded educational approach is required to shape young brains. It will assist students in improving their abilities, which will boost their productivity, employability, health, and well-being in the next decades and assure India's overall growth [35].

The COVID-19 epidemic precipitated an abrupt shift toward online instruction and limited campus access. To determine how university students reacted to the abrupt move to online instruction after campus closure due to the COVID-19 epidemic. Students in Public Health Nutrition responded to surveys two and twelve weeks after the lockdown in Norway on March 12, 2020 (N = 79; response rates of 20.3% and 26.6%, respectively) and participated in digital focus group interviews in May 2020. (Mixed methods study). Seventy-five percent of students said that their lives had become more stressful two weeks into the lockdown, and fifty percent believed that learning objectives would be more difficult to attain owing to the abrupt move to online schooling. Twelve weeks into the lockdown, the respective percentages were 57% and 71%, respectively. The most significant issues among students were a loss of social connection, housing arrangements unsuitable for home office use, including limited internet bandwidth, and a general feeling of diminished desire and effort. The students cooperated well in digital groups, although they would have preferred to be allocated to smaller groups with classmates they already knew. Most students believed that future digital courses may benefit from prerecorded and streamed lectures, regular virtual meetings, and student response mechanisms. Students' experience with written home examinations undoubtedly affected their choice for them over online versions of past on-campus exams. The dropout rate has stayed steady from prior years [36].

Because of the rapid emergence of the COVID-19 pandemic, this investigation was encouraged to take place. With an online platform to support the learning process, Saudi institutions have recognized the successive viewpoints of

students. There are several issues that L2 learners have while utilizing an online learning environment, and this research aims to solve such issues. Analytical research methods were used in this investigation. A questionnaire was used by Saudi institutions to gather data. This research was conducted using a sample size of 128 L2 learners. According to the findings, the vast majority of respondents believe that online learning is beneficial. Apps can be accessed and interacted with, however there are still some issues to be overcome. By adjusting new regulations about online motivation, engaging students and helping them grow as learners, the research suggests ways to build secure, friendly and demanding learning environments. Teachers would also benefit from periodic training on the many components of online education. Education officials, schools and universities should also focus more on subsequent training to improve the technological and communication abilities of teachers. For both L2 teachers and students, new and creative virtual teaching methods are in great demand. Managing virtual classrooms during pandemics demands additional attention and policies [37].

- **Students and Teachers' Perspectives on COVID-19's**

    Online Exams

In response to COVID-19, the UAE Ministry of Education required that educational institutions switch to distance learning. Students and professors at a public university in Dubai have been interviewed about their experiences with online learning. Through a semi-structured interview guide, the authors performed qualitative research in focus groups. All of the meetings were taped and then literally transcribed for your perusal and enjoyment. Following the classification and analysis of information in NVivo 12, thematic content analysis was conducted. There were discovered and expressed under themes a number of recurrent, developing, and divergent opinions. Participants thought that the changing human contact was a crucial aspect in distant learning. Assessments were changed to minimize cheating; however, it was argued that enhancing students' responsibility and sensible use of questions was a more successful approach. Changes in the learning environment and regulations at institutions, as well as student well-being, were all mentioned as potential obstacles. The advantages of remote learning included more inclusion, flexibility, the availability of recorded sessions, and time-saving benefits. In addition, teachers were forced to improve their technology abilities as a result of the rise of remote learning. Students should be assessed on participation in class, as well as on the use of recordings and other communication techniques. Courses and disciplines, as well as a desire for synchronous instruction, were clearly influencing students' learning preferences. Distance learning is more acceptable and more easily accessed due to cultural differences in contact, evaluations, and acceptance. Digital education in higher education may be improved by addressing the sociocultural impacts of the location in which it is implemented, according to the findings from this study [38].

This study sought to validate students' and faculty's experiences with e-learning amid the present epidemic. From

February to June 2020, a cross-sectional investigation was undertaken. Seven questionnaires were issued online to all undergraduate students and professors at Southern Medical University (4 to students and 3 to instructors) (China). To examine the data, descriptive statistics and t-tests were utilized. Statistical significance was defined at p.05. Results: Prior to the all-e-learning regiment, most students had some exposure to e-learning, but over 90% of instructors had little or very limited expertise. Overall, students' evaluations of the most useful e-learning activities did not vary considerably (Week 3 vs. Week 9). Nearly 60% of students (Week 9) found online discussion/Q&A/forum beneficial, up from less than 30% before (Week 3). Gaps in e-teaching activities employed and perceived efficacy developed among teachers (Week 9). Despite the fact that pre-recorded lectures were the most often utilized approach, the least gap was connected with live-stream lectures—the least used. Overall, teachers' perceptions of the efficacy of e-teaching vs. in-person instruction did not alter substantially over time. When the findings from students (Week 7) and teachers (Week 9) were compared, a little larger number of teachers thought online teaching was less successful than in-person teaching, and a slightly higher percentage of teachers said online teaching was significantly less effective. Students' choices for preferred learning modalities following the restart of in-person learning did not alter substantially generally (Week 3 vs. week 9). According to surveys performed in Week 9, a somewhat greater proportion of students (70 percent) than instructors (60 percent) favored certain types of hybrid learning, while a smaller percentage of students selected just face-to-face learning. Approximately three-quarters of professors indicated that at least half of course content could be mastered by pupils on their own. Overall, the perceived efficacy of e-learning among students and instructors has not changed considerably over time. Neither have students' choices for different learning mediums moved considerably once in-person learning resumed. However, useful directional patterns have formed. Our study demonstrates experimentally the necessity to confirm students' and instructors' experiences over time in order to inform more comprehensive e-learning advances [10].

Because the spread of COVID-19 has disrupted a wide range of global activities, including education, this pandemic is a danger to mankind. When the virus spread, schools were pushed to use e-learning, even if this isn't a straightforward process to do. From the perspectives of students and teachers, e-learning at a public institution during the COVID-19 epidemic is the primary subject of this research. The purpose of this study is to identify any potential issues that may arise during instructional activities. In this research, Benghazi University students and faculty members in the IT department are the subjects of attention. The data were examined using a descriptive-analytical methodology and statistical methodologies. For the students and the instructors, there were two questionnaires that were developed and distributed: The authors wanted to know how much e-learning was utilized during the COVID-19 epidemic, as well as the advantages, disadvantages, and issues of integrating e-learning into the IT faculty. Results from our analysis shed light on some of the obstacles and advantages of employing e-learning systems

rather than conventional education in higher education in general and during crises. Students, according to the findings of the research, think that e-learning is beneficial to their education. While the professor's burden is reduced, the student's

workload is increased. Libya's poor Internet access during the epidemic is the biggest impediment to e-learning. Faculty members believe that e-learning may help students improve their computer literacy, but they also acknowledge that it is an expensive option. Many of the suggestions made by the authors should be highlighted since they have the potential to improve the likelihood of e-learning being implemented. Students and faculty members at the institution must have access to the internet in order to use e-learning. To use e-learning instead of going to the main campus, a sophisticated electronic library and classrooms equipped with all the essential technology and tools are required. E-learning requires frequent training and seminars for teaching personnel, as well as regular IT infrastructure maintenance and computer and support equipment maintenance. As a pedagogical influence, concentrating on the learner's attributes, such as their prior knowledge and how to inspire them, is an important part of everything else mentioned here [39].

• **Distance Learning One Year After the Covid-19**

   Pandemic

Colleges and universities were forced to shift from face-to-face instruction to e-learning after the recent breakout of the COVID-19 pandemic. E-learning and the disruption of traditional educational functions in Greek higher education are the focus of this study, which examines the views of undergraduates in two regional Greek universities (the University of Patras and the Democritus University of Thrace) compared to those of their peers collected via the same method and tool a year earlier. A year following the unexpected and complete shift to online instruction during the pandemic, this study was done in May 2021 to investigate students' thoughts and sentiments. The findings imply that students prefer face-to-face courses, but they also provide useful insights into e-teaching and learning, thereby highlighting the importance of university pedagogy in motivating students on their academic journeys [40].

III. CONCLUSION

The research found online examinations effective for assessing COVID 19 pupils. Exams like these may help students improve their academic performance and offer teachers with information about student issues, weaknesses, and progress. Online test takers enjoy the exam's accuracy and fairness. Our study's students were happy with e-learning and the knowledge they obtained. Some schools lack required infrastructure because to the pandemic's quick migration to online learning. Online assessments pose challenges for instructors. Online tests are difficult for teachers to administer. The online evaluation was flawed because of misunderstandings of the instructions, slow connections, and unrevisable essay questions. The authors propose that distant learning should be accepted and fostered as a supporting

component in the learning process, enabling educational institutions to swiftly transition to distance learning as required. This study implies that educational institutions should adopt a more full, realistic, and compassionate approach to emergency instruction in the future. Online classroom dishonesty was greater than in-person classrooms for most measured items, and students were proficient at dealing with faculty measures to combat cheating. First-time cheating climbed, online cheating was bigger than in-person cheating for most graded items, and students were skilled and flexible in dealing with anti-cheating methods. Most academics feel post-COVID-19 writing assessments need improvement. COVID-19 argues for AES with triggers for human rater engagement to achieve contactless human-material interaction [40].

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