Limitations and Challenges of Online Teaching at Higher Education Institutions in Oman

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***Abstract*—Higher education institutions have opted for online teaching due to COVID-19 Pandemic as delivering classes online was the only available option to continue their teaching and learning activities. Higher education institutions were found to be more dynamic during their utilization of electronic platforms in delivering their activities and due to the unclarity of COVID, it seems that online teaching and learning will remain a crucial part of higher education due to its flexibility, accessibility, and convenience. However, to determine whether online teaching is the best choice for higher education institutions, it's imperative to shed some light on the challenges and limitations of teaching online to enable institutions in Oman to decide on the future of their teaching and learning activities. Therefore, this study intends to examine the limitations and challenges of online teaching in Oman. The study data was collected by employing a questionnaire survey and distributed to all higher education institutions in Oman. We have received responses from a total of 25 higher education institutions that have participated in the study of which 12 are private universities representing 48%, 9 are public private colleges accounting for 36%, and 4 are university colleges accounting for 16%. The study revealed that the challenges faced by HEIs were student participation and active involvement, evaluation of performance, absenteeism, and insufficient knowledge of the use of online tools, and technologies both by instructors and students. Some of the limitations identified in using technological tools for teaching and learning were the efficiency of internet connectivity which disrupts the teaching engagement, restricted access to some of the technological tools, ineffective ways to gauge academic integrity, and inability to exhibit the capabilities and skills of learners.**

***Index Terms*—Higher education, online teaching, Oman, pandemic**

I. Introduction

Education is an important facet of life that provides learning through a formalized and systematic manner in giving knowledge, skills, and expertise for employment and sustenance. However, lifelong learning is also one form of education involving learning through experience, observation, and putting into practice those actions for improving skills. In this sense, education can be formal and informal depending on the approach to learning where the former is more customized, and the latter does not have a stipulated system. Formal education is by large the standard form of imparting education at all levels and is defined by UNESCO as "*education that is institutionalized, intentional, planned through public organizations and recognized private bodies and, in totality, make up the formal education system of a country*" [1]. On the contrary, informal learning is a form of non-formal learning that gained momentum very recently and involves learning through a self-paced approach, self-directed learning, and learning through experience.

Growing industrialization, globalization, and liberalization have brought paramount changes in the education eco-system to the extent that has caused the reconceptualization of non-formal education (NFE) considering the recommendations brought in from developing nations [2]. As a result, this has brought a change in the trend between formal and non-formal learning in the last two decades. As non-formal learning or education has gained equal importance and significance as the formal learning and education system. NFE education is given more priority to complement, supplement, and an alternative to formal education and learning since adults entering the workforce after having formal education lack the basic skills, requisite knowledge on executing specific tasks in work, lacking the self-centered and independent capacity to handle, thus being largely being unsatisfying to work nature [3].

Nevertheless, both types of learning are vital in the sense that facilitates imparting knowledge and skills required for work nature, but formal education and learning are the foundation and pillars for all subsequent learning environments because it imparted through educational institutions with some definite set of norms leading to earning a degree [4].

Formal education is a standardized and systematic learning concept that has gone through many transitions brought by the globalization of the education system and later developing nations have progressively moved towards liberalization of education concepts in higher education [5]. Subsequently, this has eventually transformed formal education and learning by supplementing with technology-oriented approaches such as online learning through mobile devices over the internet, through eLearning portals by use of learning management system (LMS), distance education, virtual learning rooms, etc. Globally online learning is being increasingly imparted for most of the programs which have become an affordable form of formal education and learning in HEI's across the world. However, the available data and information on the use of online learning in higher education, especially within the region, are very limited and scarcely accessible to understand the scope and significance of E-learning for future generations.

A. Research Problem

The incidence of coronavirus disease -19 (COVID-19) has affected the entire world and has impacted the educational sector worldwide causing many higher education institutions

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(HEIs). These are institutions recognized for higher learning namely universities, colleges, and polytechnics specialized in offering different fields of study. Globally almost all institutes classified as HEIs are obliged to discontinue face-to-face teaching and shift to an alternative safe mode of delivering education, as a result, this has not only caused a huge economic impact on education but also the global economy [6]. Particularly this crisis has caused substantial disengagement in the performance evaluation of students through formative and summative assessments. Also, on a global level, large universities having international students are facing a high risk of continuing their courses in this situation, but administrators must make strategic plans to reduce the impact of COVID-19 on students and institutions sustainability.

To cope with the sudden shutdown of educational institutions and make sustainable alternatives, the most effective and feasible option is to adopt online learning to maximize the prevailing conditions, hence teaching and learning through online mode using various technology platforms has gained momentum in almost all educational institutions across the globe.

B. Challenges and Limitations of Online Teaching Worldwide and GCC

E-Learning through online or distance education is not very advanced in many countries, while most of the universities in developed nations have integrated some form of online education in their courses, however the trend has gradually gained momentum in developing nations, especially from the COVID-19 situation.

Developed nations in the west face imminent challenges with online teaching concerning international students which are contrary to the problems in developing nations including the gulf cooperation council (GCC). The GCC is a union of 6 member Arab states in the gulf region including UAE, Saudi Arabia, Kuwait, Bahrain, Oman, and Qatar.

Moving swiftly to online learning of all the programs has opened many challenges to educational institutions due to many limitations from technology knowhow, internet speed, lack of awareness on online learning, and absence of Arabic language in the middle east region (Mirza and Abdulkareem, 2011 cited in) [7]. To overcome some of these challenges the world bank is interfacing with all nations and working with ministries of education in many countries to provide support and facilitate the use of technology during the COVID-19 pandemic [8].

Due to Covid 19, it seems that the future of higher education in GCC remains elusive from studies done in various universities and colleges about the impact. There are no specific data reports published so far on the consequence the pandemic has on higher education in GCC, nonetheless, the pandemic has bought a considerable change in higher education in the region as many higher education institutions have moved to online teaching presently as an alternative strategy [9].

There is considerable backwardness and data deficiency related to the challenges and limitations, especially in the GCC region on the use of online teaching and learning in higher education and the lack of sufficient research studies, there is an imminent need to focus on the effectiveness of using online learning, especially during pandemic situation COVID-19. In this purview, to further understand the nature of online learning and teaching in higher education, an initial analysis was conducted through a feedback survey to know the challenges and limitations faced by the faculty at our institution on the use of eLearning, especially through online teaching and learning, the responses revealed diversified opinions on the use of online teaching.

Consequently, from the responses, it was found that there is a lack of supporting evidence through research on the influence and effectiveness of E-learning on teaching and learning over other conventional methods which have not been studied critically to assess the effectiveness, efficiency, and feasibility in imparting education in all sorts of circumstances and conditions. Besides, educational institutions are obliged to shift to E-Learning mainly teaching online by using various technology platforms due to the seriousness of COVID-19 pandemic conditions around the world.

II. Research Methodology

A. Research Instruments

The data and information about the research study objectives were collected by employing a questionnaire survey analysis. The questionnaire survey method was principally used to fulfill the objectives of the research study due to the ease of accessibility, convenience, and scope of gathering data from a large population [10]. For the data collection, a structured questionnaire was designed and sent to various HEIs through our institutional-supported database collection. The questionnaire was prepared using the free licensed google forms software to ensure it is convenient for the respondents to attempt the questionnaire. The survey link for attempting the questionnaire online was circulated officially to the institutions of higher education in Oman through our institution and by the personal contacts of the authors.

The questionnaire was structured into three sections containing a total of 51 questions to obtain the specific details related to the study and comprised of dichotomous questions, open-ended questions, and closed-end questions to understand the knowledge and evaluate ideas and opinions of respondents following the fundamentals described in conducting survey analysis by [11].

B. Data Management and Analysis

The responses received from the respondents from differing HEIs are analyzed initially in Microsoft excel software and blank responses are filtered before they are analyzed. Further, all ethical issues were considered regarding privacy and confidentiality and due rights were given to the respondents to withdraw or omit attempting any question inappropriate for the response. Next, the information received from all the respondents from various HEIs in the survey was considered for the interpretation of the results and is used for concluding the study. As applicable, from the survey results descriptive data was presented with

supporting graphical representation to disclose the findings of the study.

III. Results and Discussion

A. Demographic Data

The study responses received through a questionnaire survey analysis from the different higher education institutes in Oman are presented. We have received responses from a total of 25 HEIs that have participated in the study of which 12 are private universities representing 48%, 9 are public private colleges accounting for 36%, and 4 are university colleges accounting for 16%. Of the above HEIs, most of the participants are from teaching faculty to the extent of 77.8% while 29.6% of them are from academic staff. Of the 25 HEIs that are considered for the study, 24 educational organizations have affiliations with external international organizations while 3 of them are autonomous institutes. From the group that is affiliated with external international organizations, 14 institutes were known to have an affiliation for more than 7 years, 3 institutes for 1–2 and 5–7 years, 2 institutes for 3–4 years, and 1 institute for more than 25 years. It is worth noting that 80.8% of the institutes that are involved in our study are in cities, while 15.4% are from wilayat and 3.8% are in the governate. It is also important to reveal that 96.3% of the institutions examined in our study possess accreditation from some sort of accrediting agency.

B. E-Learning Database in HEI

E-learning is an excellent facelift to teaching online granting flexibility to the learners to learn at their convenience, however, it is important to know how well the various tools, technologies, and knowledge of integrating technology into live teaching are effectively and efficiently undertaken by the instructor. In this context, 26.9% of the institutions have 3–5 and 6–10 years of experience in integrating technology in face-to-face teaching, while 19.2% and 11.5% of institutions have 1–2 years and more than 10 years respectively in the field, but only 3.8% of the institutions are using an integration of technology in their live teaching and face-to-face teaching for more than 20 years.

From the analysis of variable data on assessing the years of experience faculty have in integrating technology into live and face to face teaching, only 23 institutions have attempted to respond to this question, reporting that 26.9% of institutions each has experience between of 3–5 and 6–10 years in adopting an integrated teaching practice. However, for the technology involvement into teaching using online and web-based components, 48.1% of institutional faculty had experience of 1–2 years in technology adoption into teaching, followed by 18.5% of institutions had experience in the range of 3–5 and 6–10 years. In the same category, only 7.4% of the institutions have had experience for more than 10 years. Further concerning the level of competence in teaching online (excluding face to face teaching), 48.1% of the HEIs faculty have only 1 year experience in online teaching mode, 29.6% have 2–4 years' experience, 11.1% between 5–7 years. It is also inferred from the tabulated data that 3.7% of respondent institutions have less than or absolutely no significant experience in online teaching mode (Table I). Besides, there are no HEIs observed in our survey response to have experience above 8 years in the category.

For technology involvement in imparting education, the results indicated that 48.1% of the faculty from the HEIs has 1–2 years of experience in teaching using online web-based components, 18.5% have 3–5- and 6–10-years of experience, 7.4% have more than 10 years' experience. Besides, in this category, around 7.4% of the faculty in the study reported that their institutions have employed fully online teaching without adopting blended teaching and learning method. Referring to the awareness and competency in teaching fully online courses, most of the faculty accounting for 48.1% have had around 1-year experience in the online approach, while 29.6% of faculty with 2–4 years and 11.1% with 5–7 years of experience in the online mode of delivering courses. On the other hand, only 3.7% of the faculty fall in having no experience in online teaching Table I.

TABLE I: Demographic Data of the Teaching Experience Studied in Target Institutions in Using Online Teaching

Variables (experience in years)	Teaching Faculty	
	N	%
Integrating technology into live training and face-to-face teaching		
1–2	5	19.2
3–5	7	26.9
6–10	7	26.9
>10	3	11.5
>20	1	3.8
Teaching courses with some online and web-based components		
1–2	13	48.1
3–5	5	18.5
6–10	5	18.5
>10	2	7.4
Teaching fully online courses (excluding face-to-face teaching)		
0	1	3.7
1	13	48.1
2–4	8	29.6
5–7	3	11.1
8–10	0	0
>10	0	0

C. E-Learning Technology in Online Teaching and Learning

With the onset of the COVID-19 pandemic along with stern preventive measures on maintaining safety measures, E-learning has gained more prominence in teaching and learning across the educational sector. As online learning has come to stay, there would be certainly improvements and advancements in the way technology is used to augment effective teaching, while the response from the study says in general 77.8% of institutions in the study would offer programs/courses through E-learning including full-time and part-time, though 22.2 % report has not considered E-learning as the prime mode of teaching and learning, however from those offering E-learning, 84.6% of the institutes are using online teaching and learning as a mechanism for E-learning in their courses/programs with the exception that all the institutions have reported that presently teaching and learning are undertaken through online environment notwithstanding that all the educational institutions (100%) in the study have resorted to some form

of online teaching and learning as an alternative to face-to-face teaching due to COVID-19 pandemic. After this understanding, the need for using online teaching and E-learning as a substitute for face-to-face interaction in educational institutions reveals that 57% of the institutions feel it is very important and crucial, but 30% of the institutions claim it is very much necessary to shift to online teaching immediately Table II.

TABLE II: EDUCATIONAL INSTITUTIONS IN THE STUDY SHOWING PERCENT OF TRANSITION TO ONLINE LEARNING DURING THE COVID-19 PANDEMIC IN THE REGION

Percent range of transition to online learning							
Between 10-25 % of the learning		Between 25-50% of the learning		Between 50-75% of the learning		Between 75 – 100% of the learning	
n	%	n	%	n	%	n	%
0	0	1	4.0	2	8.0	22	88.0

Particularly, regarding the extent of courses/programs that are offered in this mode, 88% of the institutions claim that not all the courses/programs are offered through an online platform, 8% of the institutions are implemented online teaching in some of their courses/programs and 4% of the institutions using blended learning approach for their courses/programs. Further, online teaching and learning as part of E-learning in higher education institutions are offered currently at the bachelor's degree level in all (25) responded institutions of our study, while 21 institutions are offering at the master's level, 11 institutions at the associate degree level, 2 institutions are offering for short term post-graduate courses, 5 institutions at UG level and 3 institutions for professional certification courses. Not only that, 52% of the educational institutions are adopting online teaching tools and technologies in partnership with their affiliate organization but 28% of them have adopted their own institutional recommended technologies. In contrast, the system of online teaching and learning practice in 56% of the institutions started in the year 2020, while the same in 20% of institutions began before and in the year 2019. It is also interesting to note that around 4% of the institutions in the study have taken to online teaching in the year 2021 lately.

Concerning the different E-learning approaches employed across the institutions of the study reveals that some of those E-learning methods explored by the institutions are blended learning, use of open education resources (OER), lab-based, and virtual learning environments, together with adopting different online tools and technologies as a platform for teaching. Also, analysis indicates that 60% of the institutions are already offering courses using a blended learning approach whereas 28% of them have made plans to adopt them in the future. Alternatively in this distribution, 29.2% of the institutions are offering < 10% of their total courses through a blended learning approach, 20.8% of the institutions are offering around 50% of their total courses, but the same percentage of institutions state the extent of course offerings through blended learning change between semesters in an academic year, though 8.3% of the institutions in the study are found to offer all their courses through this approach.

Analysis shows that the majority (72%) of the institutions are using Microsoft teams and institutionally supported learning management systems (LMS) as prime online tools to impart teaching, comparatively (28%) using video conferencing tools such as google meet, zoom, although blackboard, Moodle are limitedly used. Despite those tools and technologies, less than 10% of the institutions are also adopting recording sessions in Microsoft power point and uploading the sessions in LMS. Conversely, to effectively augment teaching through using E-learning, 69.2% of the institutions expressed the need for providing training to the instructors on using online tools and technologies. The analysis shows that 19.2% of the institutions feel sometimes it depends on the instructor's experience in using online tools. However, for effective teaching through online platforms, instructors regardless of previous exposure to online technology and tools need some sort of training, while there are multiple areas an instructor needs the training to gain experience in using online tools, some of the topics that instructors need practical exposure include conducting effective examinations, engaging, or boosting student interaction, administering assessments, in course designing, etc.

The analysis revealed that 50% of the institutions felt that such kind of training in online teaching and learning methods would have a significant influence on the future of their academic institution. Subsequently to this outcome, 26.9% and 15.4 % of the institutions in the study also reported that employing online teaching and learning methods would have a medium to extremely high influence on the future of their academic institution respectively.

Institutions play an important role in facilitating the provision of various online resources to enhance the level the learning by students, with this purpose, (64%) of the institutions have considered electronic whiteboards, video streaming, and web-based video conferencing as the most preferred learning tools over others. Accordingly, effective and efficient student-teacher interaction is also of much importance in the E-learning mode of teaching and to maintain a good dialogue, various digital tools are employed by instructors across different institutions. The most preferred digital educational tools are khan academy and Kahoot combinedly used by more than 50% of institutions, while Socrative, padlet, moodle, and adobe spark video is all used by 10% of the institutions apart from other less-known digital tools.

D. E-Learning Challenges and Future Scope for Online Teaching and Learning

E-learning as a teaching and learning method pre-covid-19 was not much popular and overwhelming in academic institutions but the scenario has flipped over due to the current pandemic situation which demanded the extensive use of online resources and tools for education. The study showed that 52% of the institutions claim that administrative and institutional issues such as financial support and provision of new E-learning technological tools are essential factors influencing their institutions from improvising online teaching and learning, whereas 40% of the institutions believe limited technology and in-house infrastructure facilities are challenges restricting the E-Learning mode of

education. Similarly, the results show that 69.2% of the institutions have expressed that E-learning is posing a challenge to faculty and students in limiting the amount of learning taking place online, though 26.9% of institutions feel there are certain advantages through E-learning that can be explored. The biggest challenge includes interruption in internet connectivity reportedly felt by the majority of the institutions (92%), followed by lack of learner motivation and engagement (68%), lack of proper interaction (64%), inability to participate in extracurricular activities (56%), inaccessibility for practical training (52%) are some of the main limitations apart from less significant factors like inefficient technological tools, insufficient computer literacy, etc.

There are also fewer important factors substituting to the cause like, such as lack of clear guidelines, improper evaluation of student performance and progress, and indulging in unfair means and plagiarism expressed by other institutions affecting online teaching and learning. Hence evaluation of the online teaching and E-learning is an important task that should be done in two facets, to assess the efficiency of online teaching and judge the effectiveness of E-learning in meeting the outcomes and evaluating the performance of students from E-learning education. In response to the general notion of 69.2% of the institutions believe assessing the student's performance is equally essential in an online teaching environment against 15.4% of institutions claiming it depends on technology and tools used in online education. Contrary to the observations, the survey shows that 64% of the institutions have evaluated the effectiveness and efficiency of the online teaching and E-learning methods in achieving the outcomes, while 16% have not put into any system of evaluation, whereas 20% institutions are sometimes adopting mechanisms to evaluate the effectiveness of online teaching Fig. 1.

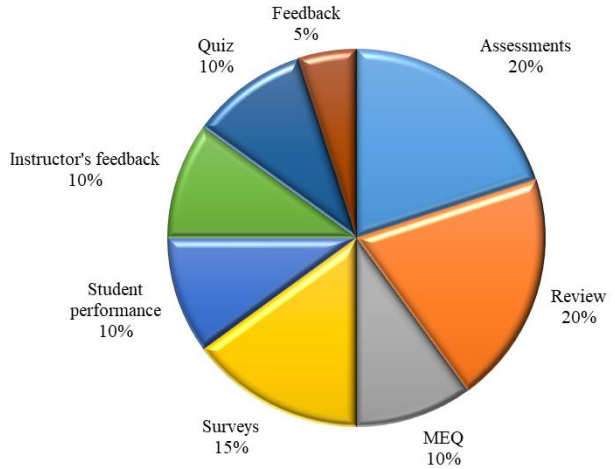

Fig. 1. Methods adopted to evaluate effectiveness and efficiency towards the achievement of student learning outcomes in an online environment.

While there are many ways generally used in traditional teaching, in the e-learning mode of education, institutions in the study have adopted different ways to assess student's performance using formative and summative assessments, case study exercises, student feedback, exit surveys, discussion forums, comparing grades in online and face-to-face teaching, class polls, presentations, online quizzes, midterm tests, reflective analysis techniques, etc. Moreover, care should be taken to ensure student performance is assessed appropriately in an online teaching environment, while 69.2% of the institutions report that the number of performance measurements depends on the assessment instruments designed by the instructor, but 34.6% believe that student performance should be tested at the end of course completion by administering course or module evaluation questionnaire (MEQs), and 26.9% says assessing the performance should be done at the mid-course stage, although the majority (88.5%) of the institutions in the study described of evaluating the student's knowledge and understanding and have achieved the learning outcomes with the online environment. To validate the accomplishment, course, and program evaluation grades are used as benchmarks in the majority of the cases (96.2%), apart from successful course completion (61.5%), student self-assessment report (53.8%), ability to solve critically and analyze problems (46.2%), etc..., are measures taken by institutions in the study to ensure the acquired learning outcomes, knowledge, and understanding are gained in the online teaching and learning. Equally, from the standpoint of the E-learning mode of education, certain limitations are unable the instructors to assess the performance of students and are viewed as important consideration factors Table III.

TABLE III: FACTORS CAUSING DIFFICULTY IN ASSESSING STUDENT PERFORMANCE IN E-LEARNING MODE OF EDUCATION

Factor affecting student performance assessment	Weightage of factor (percent)	
	n	%
High rate of absenteeism during online teaching	17	68
Lack of standard methods recommended to assess during E-learning mode of education	8	32
Inadequate/improper understanding of assessment tools	3	12
Inadequate institutional support and guidance	1	4
Inconsistent student participation	13	52
Restricted access to technology tools for assessing student performance	7	28
Lack/inexperience of instructor in using the right assessment methods to assess the performance	9	36
The high number of students per course	1	4

Currently, as online teaching and E-Learning have made their mark, the success of these methods to continue in the future will depend on the flexibility with which programs are delivered by institutions, institutional IT support, improvements in online technology, and the technical competency of the instructors. Also as the future of education may well gradually transit towards E-learning, as a result, HEIs, instructors and the management should probably consider attaining expertise in some significant areas, using effective tools and technologies, planning to use blended learning, improvising online teaching methods, identifying effective methods to evaluate student performance in online teaching, strategies and methods to encourage student participation as well as increasing student retention and motivation in online classes and highlighting the benefits and use of open education resources. Subsequently, this could lead academic institutions globally to move towards blended learning as a suitable alternative, supplementing delivering more courses under online platforms and substituting face-to-face teaching.

In the case of the higher education sector in Oman, there are some significant aspects to be standardized and customized in the E-learning process such as having guidelines and instructions from the ministry of higher education on the process and procedures to follow in an online teaching and learning environment, amending common and uniform policy on E-learning across all the higher education institutions in the region, to conduct an exit exam after student's graduate is required to ascertain the four domains of learning are acquired through the E-learning form of education and lastly enhancing instructor motivation and encouraging them to adopt best practices of online teaching.

IV. Conclusion

Online teaching and learning mode of education has gained more recognition recently due to the shift from face-to-face classroom teaching due to the COVID-19 pandemic. This sudden transition in the way teaching and learning are imparted on a wide scale across academic institutions around the world has subsequently imposed challenges and exposed the limitations of teaching and learning taking place through an online environment. As a result, the research study specifically focused on knowing the different limitations and challenges of online teaching and learning experiences in higher education institutions in the region. While the study provides a wealth of knowledge, and understanding and adds substantial information to the literature on E-learning education, the outcomes can help researchers and academicians to further analyze the effectiveness and efficiency of online education in diversified contexts.

In response to the changes brought in teaching and learning, most of the higher education institutions were seen to have taken cautious steps and consistent efforts to understand the need to shift the teaching and learning mechanism to an online environment, as a result, the majority of the institutions have adopted to put into practice various tools, technologies, and techniques available for teaching in an online environment. However, it should also be noted that shifting to online teaching and learning of all courses and programs in a short period has been a significant challenge faced by academic institutions especially when such unforeseen situations are not anticipated. Even so, the majority of the educational institutions have adapted to the crisis by providing training/workshops to faculty on how to teach effectively in an online environment, facilitating resources by the management, developing mechanisms and procedures for evaluating student performance, reviewing policies for academic appraisal, preparing alternative methods for practical learning.

Likewise, in an online teaching and learning environment, student participation and active involvement, evaluation of performance, absenteeism, and insufficient knowledge on the use of online tools, and technologies both by instructors and students are some of the challenges that are significantly felt by institutions, and these must be addressed to ensure teaching and learning through the online environment are taking place effectively. Again, there are obviously limitations in using technological tools for teaching and learning, foremost of them is the efficiency of internet connectivity which disrupts the teaching engagement, restricted access to some of the technological tools, ineffective ways to gauge academic integrity, inability to exhibit the capabilities and skills of learners, etc. are some of the recurring issues that should be seriously viewed by the institutions to resolve in an online mode of education. On the contrary, there is also tremendous scope to explore the concept of online teaching and learning which can be implemented to overcome the challenges and limitations, such as introducing blended learning as an innovative teaching approach, enhancing the skills of instructors and students in utilizing the E-learning tools and techniques, inculcating holistic learning through practical training and ensuring there are proper guidelines, guidance and benchmarks available to assess and evaluate the learning from each of the approaches.

A. Limitations of the Study

The present study conducted to know the limitations and challenges of online teaching in the context of Oman's HEIs has certain limitations mainly from the inability to use multiple research instruments due to the social restrictions prevailing due to the pandemic. The data collection methods employed in the study were only limited to an online questionnaire survey which gave the scope for receiving the response from fewer HEIs in the region, as questionnaire surveys do not always encourage overwhelming participation from every respondent. On the other hand, while many institutions in the region and globally probably have engaged in such similar studies before, the enthusiasm to respond to surveys of this nature was very low and hence a complete understanding of the limitations and challenges comprehensively was not captured completely from the study.

B. Future Scope of the Study

The outcome of the present study shows potential scope to further study the concept of online teaching in the higher education sector holistically and investigate the significant limitations, challenges, and opportunities that can be explored in an E-learning mode of education. In addition, those objectives can be studied in different contexts categorized at region-level institutions and national-level institutions to draw comparisons between private, public, and university-level academic institutions. Then assess the common and institution-specific issues, limitations, challenges, and opportunities that arise in the E-learning mode of teaching and learning among the various level of HEIs.

Conflict of Interest

The authors declare no conflict of interest.

Author Contributions

HM developed the study concept and outlined the structure of the research approach. HJ has formulated the research methodology, data collection, and analysis. Both authors have contributed to data analysis and presentation of results. HM and HJ wrote the paper jointly and reviewed each other's

write-up, and Hesham provided a final revision of the paper. Both authors have agreed to the final version of the paper for submission.

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