Quality Issues In Online Distance Learning

قضايا الجودة في التعلّم عن بعد عبر الإنترنت

by

ELHAM AHMAD AL DOUSH

Dissertation submitted in fulfilment

of the requirements for the degree of

MASTER OF EDUCATION

at

The British University in Dubai

October 2020

DECLARATION

I warrant that the content of this research is the direct result of my own work and that any use made in it of published or unpublished copyright material falls within the limits permitted by international copyright conventions.

I understand that a copy of my research will be deposited in the University Library for permanent retention.

I hereby agree that the material mentioned above for which I am author and copyright holder may be copied and distributed by The British University in Dubai for the purposes of research, private study or education and that The British University in Dubai may recover from purchasers the costs incurred in such copying and distribution, where appropriate.

I understand that The British University in Dubai may make a digital copy available in the institutional repository.

I understand that I may apply to the University to retain the right to withhold or to restrict access to my thesis for a period which shall not normally exceed four calendar years from the congregation at which the degree is conferred, the length of the period to be specified in the application, together with the precise reasons for making that application.

_____
Signature of the student

COPYRIGHT AND INFORMATION TO USERS

Abstract:

The objective of this research is to determine the quality issues of online distance learning and explore the factors which affect the quality of online education. The description regarding online distance learning revolves around the concept that it does not take place in a single classroom. However, the learning class takes place across a distance and it has evolved after a traditional history. This study is based on primary data and a survey method has been employed to collect the data of 100 respondents through a structured questionnaire. The research approach in this study has been used of quantitative research as the data is to be collected is of primary nature. The findings of the study suggest the online education is significantly influenced by the quality metrics, technology and the perceived significance in this regard. The study has certain limitations such as sampling bias and selection bias which can change the results of the study potentially. The key recommendations of the study include that working must be done on the adaptability of the eLearning followed by easy access to the online learning material. In addition to these, it has been recommended that eLearning portals must be using simple navigations so that students can understand them accordingly. The future studies can incorporate the effect of COVID-19 as a catalyst in the research model suggested in this study.

نبذة مختصرة:

الهدف من هذا البحث هو تحديد قضايا الجودة للتعلم عن بعد عبر الإنترنت واستكشاف العوامل التي تؤثر على جودة التعليم عبر الإنترنت. يدور الوصف المتعلق بالتعلم عن بعد عبر الإنترنت حول مفهوم أنه لا يحدث في فصل دراسي واحد. ومع ذلك، فإن فصل التعلم يتم عبر مسافة وقد تطور بعد تاريخ تقليدي. تعتمد هذه الدراسة على بيانات أولية وقد تم استخدام طريقة المسح لجمع بيانات 100 مستجيب من خلال استبيان منظم. تم استخدام نهج البحث في هذه الدراسة للبحث الكمي حيث أن البيانات التي سيتم جمعها ذات طبيعة أولية. تشير نتائج الدراسة إلى أن التعليم عبر الإنترنت يتأثر بشكل كبير بمقاييس الجودة والتكنولوجيا والأهمية المتصورة في هذا الصدد. الدراسة لها قيود معينة مثل التحيز في أخذ العينات وتحيز الاختيار والتي يمكن أن تغير نتائج الدراسة بشكل محتمل. تشمل التوصيات الرئيسية للدراسة أن العمل يجب أن يتم على قابلية التكيف في التعليم الإلكتروني متبوعًا بسهولة الوصول إلى مواد التعلم عبر الإنترنت. بالإضافة إلى ذلك، يوصى بأن تستخدم بوابات التعليم الإلكتروني تنقلات بسيطة حتى يتمكن الطلاب من فهمها وفقًا لذلك. يمكن أن تتضمن الدراسات المستقبلية تأثير COVID-19 كعامل مساعد في نموذج البحث المقترح في هذه الدراسة.

Acknowledgement

Table of Contents

Chapter 1: Introduction

Introduction

Online distance learning can be defined as "A form of distance education which is done through an online system and eLearning while not having the physical elements involved in education. The presence of teachers on screens and getting instructions regarding the topic through various technological systems have provided a greater facility for students and teachers (Smith et al.,2018)."

Background and Overview of Research

The learning form has taken value over the internet in the field of education. Hence, online distance learning is defined as 'eLearning' because it is different from the regular class. The description regarding online distance learning revolves around the concept that it does not take place in a single classroom. However, the learning class takes place across a distance and it has evolved after a traditional history. Explaining online distance learning in another way reveals that any sort of learning where there is a difference between the teaching behaviour and the learning behaviour is declared as online distance learning. Students are often seen doing work in a group or individually while taking help from the material or informative websites arranged by the mentors. Teachers help students in every manner by giving them opportunities to get more knowledge from different sites. A media range is available for the students and the teacher where students can approach their mentors whenever they want. In today's era, as coronavirus has impacted the whole world, it is declared as a global pandemic, education is badly affected everywhere so video chatting through several applications is done to perform online distance learning. Zoom, Spritz, the unstuck app and many others are used for online distance learning purposes during the coronavirus lockdown situation. Zoom application provides a platform where group video chat can be done and teachers can conduct online lectures. Some other

applications providing the facility to set up tasks for the students are also available. Task setting applications work on a different principle as they have functions to limit the time or schedule some assignments or online quizzes. Whereas, video chatting is useful for conducting online learning sessions and group discussions (Ademola et al.,2019). Such applications and ways were not made to deal with a situation like a coronavirus, but in today's pandemic situation they are facilitating the users in many ways.

Several types of online distance learning are available in today's education system, specifically in the sector:

- Correspondence courses are conducted while having regular mailing system along with a little interaction (Smith et al.,2018)
- Online learning based on the internet offers course and regular video call classes.
- Mobile learning is done by the means of cellular devices, and it also involves the usage of some task setting apps and video chatting applications (Ademola et al.,2019).

Statement of Problem

Education delivered by the use of technology and other aids such as the internet, telephone and other forms of communication is referred to as eLearning. During recent years, the significance of eLearning has increased to a greater extent and especially during the COVID-19 pandemic where a global closure of educational institutions has been enforced to contain the spread of disease. In this study, the key problem is to analyse the need for eLearning as a substitute for the traditional means of education and whether technology will completely change the learning methodology or not.

Significance and Rationale of the Study

Research done regarding online distance learning reveals that online learning enrolment has grown faster and faster over time because of the higher level of education provided in institutes

and because the rate of population has gone up. Moreover, people expect much higher and effective knowledge as the rate of skills is increasing among countries.

Talking about the previous research, over 1.9 million students have studied through online distance learning in recent years (Simpson,2018). Hence, the number of students has grown up to 2.6 million from 1.9 million just in one year because of the quality assurance and benefits of online distance learning.

Further, the global pandemic COVID'19 has changed the way of teaching from face to face into e-learning as people are advised to stay home and keep the social distance. Most of the students are in favour of online distance learning because they can study while staying home. The academic learners and tutors have concluded that online distance learning is as equal quality-wise as the face to face interactive learning. Students feel the same and learn the same as expected in the regular classroom and because they cannot bear the loss of education in the current situation.

Most of the institutions are offering online distance learning and specific applause to the rapid advancement of technology is essential (Smith et al.,2018). Nowadays, timetables are flexible and courses are moulded according to the subject and shortage of time students are turning efficiently towards the online distance learning programs because it is an effective alternative to on-campus study. However, the advancement in technology has allowed the students to study the entire semester online while having social interaction with the clients, and they are watching lectures as well. Hence, students are now participating in a certain subject discussion because the subject wise group discussion is conducted online.

Somehow, it is considered that online distance learning requires a certain level of self-motivation and proper recognition of the degree. Hence, institutes have taken steps that students must receive the same amount of appreciation and support from the tutors as they would receive

with on-campus learning. Distance learning is considered as a pervasive and a growing phenomenon (Markova et al., 2017).

Through the higher education system on the college level, new learning arrangements and organizational structures are appearing. Most of the traditional institutions have declared online distance learning as essential for some courses. Some colleges have created new institutions that would offer online distance learning specifically (Weidlich & Bastiaens, 2018).

Online distance learning is the priority nowadays because most of the academic institutions and corporations are combining their resources so that they can bring distance learning at their workplaces.

Academic institutions are offering different levels of courses so that students from different institutions can avail the opportunity of learning from multiple schools at a time. The quality of education being delivered at online distance learning programs is not cleared yet but further research work elaborates the key factors and quality issues of online distance learning.

Highlighting the quality issues of online distance learning reveals that it has become more prevalent and somehow difficult to distinguish it from campus-based learning because all of the outcomes and policies are the same. However, the course offered and the method of teaching is also the same. The online distance learning opportunity provides remote access to the databases, libraries, learning materials, electronic media communication, archived lectures, and workgroup connections, which are usually used in campus-based learning programs. There is no such difference between the two systems. Non-traditional learning methods are more common among the students because a greater number of students have shown interest in the non-traditional learning methods while encountering the traditional ones (Ferdig et al.,2017). In today's higher college campuses, technology-based education is delivered which can be moulded into an online distance learning from within no time.

Students compete differently when they are attending campus base deduction, whereas distance learning programs have created a fundamental change among them. A noticeable difference is seen among the students who are involved in part-time jobs.

The scale and scope of offerings are usually upgraded in the schools offering online distance learning. Hence, online distance learning can be offered at the areas where previously no institute and class has been conducted. Among business education, competition has increased. A student may be getting other opportunities to join the program provided by other institutes or locations which ultimately increases competition among the universities. Such colleges would work to provide more facilities and quality education to the students with a smaller budget.

Online distance learning leaves a huge level of responsibility on the students so that they are supposed to be motivated and highly disciplined to meet the requirements of the universities. Hence, online distance learning programs can achieve the level of success by arranging a proper communication set-up between the students and their responsibility seminars (Zaborova et al.,2017).

International colleges may use their respective applications or sites based on their technological advancements during the current lockdown situation. But, every institute wants the best interaction along with the teacher and the student. However, students receive a lecture that is being delivered from the central campus location.

 Another type of learning is used during coronavirus lockdown where a video recording of some topic is presented to the students which are held at some corporate site. However, online distance learning has gained a lot of improvement in its standard as the education level has collapsed in campus-based learning. The fact is that students can learn and overcome their loss

through online distance learning rather than regular classes because the colleges are closed until further notice.

The quality issues are monitored by assuming or concluding the satisfaction level of the students. Online distance learning is mainly implemented by the utilisation of active learning techniques and interaction level between the students and teachers. The quality issues of online distance learning lie on the instructional design, learner's support, and available resources. Such factors improve the quality issues of online distance learning, living a positive impact on the students (Heidrich et al.,2018).

Hence, the literature review is based on the detailed research study about the quality issues in online distance learning along with a brief highlight of the online learning system. Different research studies are considered to evaluate the quality issues of online distance learning while focusing on the positive impacts it leaves on the students during the current pandemic situation of coronavirus.

Research Questions

A research process is performed to answer a specific set of questions which are to be answered after the review of the literature. In this study of quality issues of online learning, the following research questions have been raised (Mohajan, 2018):

- What is the significance of online distance learning?

- What are the key quality issues related to online distance learning?

- What are the key determinants of the implementation of successful eLearning initiatives?

- What is the possible acceptability rate of eLearning?

- What is the possible impact(s) of technology on the eLearning platform(s)?

Hence, the focus of the research questions of this study is towards the determination of quality and significance of online learning or eLearning platforms. The questions also attempt to answer the possible acceptability rate of eLearning in this regard and the impact of technology on eLearning platforms has been also ascertained. In the following section, research hypotheses have been developed (Snyder, 2019).

Research Hypothesis

A research hypothesis or just simply hypothesis is a testable, clear and specific statement and written in a predictive manner regarding the possible result of a scientific study. The scientific study is based on a population or a sample. When a scientific quantitative study is being carried out, the specification of hypotheses is critical (Snyder, 2019). There are several types of hypothesis but the two important forms are null and alternative hypotheses. When a researcher thinks that there is no relationship between the two variables of interest, then it is regarded as a null hypothesis and reflected by H_0. When the researcher attempts to disapprove the null hypothesis, the alternative statement presented is regarded as the alternative hypothesis in this regard. The alternate hypothesis is reflected by H_A. In this study, the null and alternative hypotheses have been written in the context of the theoretical framework as follows (Snyder, 2019):

H01: There is no relationship between eLearning and Quality.

HA1: There is a significant relationship between e-Learning and Quality.

H02: There is no relationship between eLearning and Significance.

HA2: There is a significant relationship between eLearning and Significance.

H03: There is no relationship between eLearning and Acceptability.

HA3: There is a significant relationship between eLearning and Acceptability.

H04: There is no relationship between eLearning and Technology.

HA4: There is a significant relationship between eLearning and Technology.

Outline of dissertation chapters

The first chapter of this study is that the research aims to explore the quality issues related with the eLearning strategies. The second chapter of the study contains the literature review based on prior studies, the third chapter provides a comprehensive methodology. In addition to it, the fourth chapter present analysis and interpretation of the data and the last chapter presents the conclusions, limitations and recommendations of the study.

Chapter 2: Theoretical Framework and Literature review

Introduction

Considering the previous research studies, the concept of distance learning or e-learning was created to deliver education to the students who are unable to attend their regular classes due to various reasons or affordability rates. The aim was to deliver the best quality education to the students in different periods of the day where students can do part-time jobs and study together. The education system is created to deliver education along with an access to learning for the students who live in a situation where education and learners are apart from each other due to time restrictions, distance or not able to attend the classes (Simpsons,2018). However, research studies have revealed that distance learning has become an ideal way to deliver education with equal measurements and quality to the students even outside the educational classroom. The huge number of educational institutes including schools, universities, and colleges have adopted the method of online distance learning. The status of online distance learning shows that the phenomenon is not very old and it was quite popular among the European and American educational institutes. Whereas the option of online distance learning has become more common in the current COVID19 pandemic where educational institutes are completely closed across the globe. The factor behind the acceptance rate of online distance learning is that a great number of studies in Asia are also enrolled in numerous courses which are available online. However, the exact number of universities cannot be counted which are offering online distance learning as the number is quite higher (Weidlich & Bastiaens, 2018).

Various means and methods are used while delivering the knowledge to students via distance learning programs. Such ways help transmit the course material towards the students and the course material is distributed to various parts of the world. In the introduction portion of online distance learning, the research studies state that institutes deliver the same traditional classroom environment and experience to the students sitting in their bedrooms and paying no fee for

regular class durations. Distance learning also follows other ways to deliver the knowledge as regular emailing, high technological tools, and audio or video conferences or meetings are held to keep the students and teachers in touch with each other where they can talk about the topics, materials, and course objectives (Zoborova et al.,2017). Several tools are available in today's world to deliver the online distance learning courses to every student out there. A detailed research study about online distance learning highlights the facts which can be discussed in the introduction portion of the literature as the understanding of the concept is essential before talking about the details of online distance learning. Various definitions have been delivered by various researchers to understand the concept of distance learning while the topic can be described as considering distance learning as a means of delivering education where teachers and students are in separate places at the same time with some communication connection (Sadeghi,2019). Recent studies have revealed that online distance learning has been utilised by old educational institutes as well as it is important in the history of mankind and educational tradition. However, in the modern era, the use of the latest technology has improved communication ways and has added fuel to the online distance learning methods (Heidrich et al.,2018).

Students who are not physically present at the school utilise the opportunity of online distance learning. Like in today's world, the situation of COVID19 has forced the institutes to deliver education via online systems because students and educational institutes are not allowed to attend the regular class sessions. Traditionally, online distance learning is based on correspondence courses where students get every information through the school post. Hence, online education is a distance learning program where complete distance learning protocols are followed. Students take the lectures individually or sometimes combined classes are conducted where groups of students may gather in a place and take the online class (Gregori et al.,2018).

Large scale interactive sessions are conducted where students from all of the institute participate and get open access through worldwide websites or network technologies. Online distance learning can be called e-learning as it is used as a synonym among the educational institutes (Holmes et al.,2019).

Distance Learning Versus Regular Learning

The difference between regular learning and online distance learning lies in such a way that regular classes are conducted in regular classrooms whereas the online learning session is conducted by the means of networking and online communication sessions. There is a huge difference between the learning tools as regular classrooms need a whiteboard, the presence of mentors and students along with the computing system. However, on the other hand, online distance learning requires networking sites and lecture sessions where proper internet connection along with individual room space at home is needed. The main difference between online distance learning and regular class learning involves the location which is different for everyone attending the lectures (Demouy et al.,2016). The interaction session may be more in regular class than online learning sessions. The intention to take class, as online distance learning is taken by more students as compared to regular classrooms.

Difference in Location

As online distance learning is conducted, there is a difference in interaction through online strategies where there is no need for students and teachers to be in the same classroom for the lecture. The digital lessons and assessments are also given to the students as a task. Whereas the usage of online distance learning students study from home and work online while staying at their workplaces, teachers assign them to work or different study tasks and the knowledge is checked digitally (Kaplan & Haenlein,2016).

Difference in Interaction

Because of the location, the interaction is also different between the two learning options. As the regular class involves in-person international and face to face communication between groups. Students and teachers work on regular interaction sessions daily where no such technological advancement is required. Whereas, the concept of online distance learning is quite different from the regular learning sessions because the online distance learning is based on technology and advanced teaching strategies. No in-person interaction is involved and there is a remarkable gap between teachers and student's communication. However, most of the digital communication forms are used by the online distance learning programs including messaging applications, video calls, or discussion boards where the institute's learning management system or LMS is linked (Dockter,2016).

Difference in Intention

The intention of teaching and implementation of teaching strategy is different in online distance learning as compared to regular learning sessions. As the regular classes are based on a variety of in-person teaching methods where different teaching strategies are implemented to educate the students. Whereas, online distance learning is based on a single platform of online sessions with no intention to use different strategies. The strategies can be implemented if teachers want to conduct some surprise testing or online open book exams to make it difficult for the students to achieve good grades. In the classroom, there is a supplemental way to mix things and then provide it as knowledge to the students so that they can avail different opportunities in future. However, the online distance learning method is completely based on solely online instructions where the teaching gestures, style, and environment does not matter. In this way, the teaching method in online distance learning is cheap and affordable for almost every student (Zacharias & Yiannis,2017).

What is Online Distance Learning?

Online distance learning as described above based on the online technological advancement where students get an education through online measures while staying at home and working part-time. Online distance learning provides a lot of advantages to the students as people find it hard to leave their home due to some family issue or some other reasons (Sadeghi,2019). Online distance learning could be a way to educate people who dare to learn and have no means to gain an education. As learners get a degree in their different confinement. So many workers out there who have no time and option to attend daily lectures in the institute locally can get a fixed schedule of online distance learning and they can get the same course materials as regular students are getting (Weidlich & Bastiaens, 2018). Convenient time for both the teacher and the student is scheduled which has made the online distance learning for everyone easy for everyone. As home tuition is completely locked due to the COVID19 situations, home tutors can offer online distance learning and they can increase their income along with a local opportunity to educate the students staying at home. Educational classes can be conducted in the same way as in institutes using modern distance learning (Simpsons,2018).

Students living away from the institute or the city where their institution is located can avail the chance of selecting their course or program they are willing to take. In this way, they can complete their courses or programs even when they are not living near their institute. The online distance learning program is also helpful for the prisoners as the government can provide them with the facility of getting an education online using different types of distance learning programs. Students who are not able to attend their regular classes due to any injury or expense they can find a cheaper way of getting their degree through online distance learning (Gregori et al.,2018).

Students who are willing to spend their time in productiveness while working and earning can get the opportunity of learning. However, the degree and education quality are still the same even in regular classes or online distance learning (Zoborova et al.,2017).

As coronavirus has been declared a global pandemic and most of the universities in Asia are following the precautions. In UAE the online learning programs are completely followed as the educational campuses are closed and students have returned to their homes preparing for online learning programs. Some areas where internet facility is not available the online distance learning opportunity is available for the students through emailing or manual tasks to continue their classes. As due to lockdown, the authorities have closed every educational institute either school or university in the whole world. The states of countries have declared online distance learning essential along with exams and promoting the students to the next class. Mainly all universities have suspended their classes and they are expected to continue their classes after coronavirus ends (Heidrich et al.,2018). As for the students, studying online is not so difficult. Some areas deliver costly internet connectivity which is quite a significant problem specifically in backward areas where no access to the internet. Somewhere students have declared overcrowded households as an issue in online distance learning (Holmes et al.,2019).

The Positive Impact of Online Distance Learning

The positive impact of online distance learning is not hidden as almost all students around the world are getting benefits from it. Every student out there is well aware of the tools and techniques to online distance learning and they can avail their studies through such distance learning opportunities. Mainly the benefits include the non-restriction of time and place where everyone can get access to their online lectures anywhere in the house, outside, or at work.

The Internet is the basic requirement of education nowadays and it has been considered as an integral part of education. Having a good internet connection means that the entire world is in

the hands of the students. No objectives and restrictions are seen in the internet searching world as it is far away from the boundaries and limitations. Studying from home or even from the workplace has become common due to such options of online distance learning (Ericksen and Larwin,2016).

Research studies have revealed that 90 per cent of students are intended to avail the online distance learning programs because it has no time restriction. Students can study anytime even though the time must be scheduled between the teacher and the student and both must be intended to take or give lectures at the same time. Another option is to leave the online lecture videos on a website from where students can get their daily lectures instead of having a scheduled time with their teachers. Making the use of computers and mobile phones throughout the day, taking one or two hours for online distance learning is not tough. The study material is always available in videotaped lectures, research material and chat rooms. Specific needs of students are fulfilled from past years. As researchers have stated that addiction is quite important for the students and a huge number of students are struggling to fulfil their educational commitments. Students are working and travelling to fulfil their educational commitments and it sometimes becomes impossible for them to join the regular class lecture (Chandrasekaran et al.,2019). However, online distance learning has provided an option of independent learning with its own choices and interests. Online distance learning also prices an option of someone paying on a student's behalf. As the online distance learning has become more attractive with time because so many employees are ready to pay a certain part in the course program where the poor and middle-class students can get some waiver in their fee. Employees, on the other hand, can hire those students as their employees to help them and they can work while improving their knowledge and skills at the same time.

Getting a higher degree along with making money is not a bad idea as students can still reduce their working hours in the time of exams. Generally, a student can get a faster degree through an online program because comparing the lectures to campus learning the material is less and knowledge is more. Students can get admission into any diploma or short course which delivers the same quantity and quality of education as compass learning. Online distance learning has enabled the student to finish their classes in less time and get the degree faster to grab a job and salary of their choice (Grau-Valldosera et al.,2019).

Quality Issues in Online Distance Learning

Online distance learning is effective, efficient, and viable at the same time and quality issues in online distance learning come under the advantages it provides to the students. Both sections the students and the teachers get benefits from the online courses as both have to perform less work and more outcome is gathered. Major benefits are provided by online distance learning as compared to the classrooms because the online distance learning is a great way to engage students when they blended learning technique is used to attract them. The concept of blended learning has been used in several research studies where a variety of instructional resources along with different teaching methods are used to deliver the educational content to the students in multiple ways. Secondly, the usage of online learning tools has become common among the educational institutes as it has made the instructions easier to deliver. Using a digital curriculum for such a learning program, more flexibility and control over the lesson is availed by the teachers. As they don't have to put extra time during weekends or evenings (Markova et al.,2017).

Time is saved when the lectures are shifted to an online system as the time is saved because of planning and grading. In the current COVID19 situation, students are spending less time in online distance learning and they are getting complete knowledge about their course materials.

Teachers have to deliver the lecture online through audio or video meetings via applications which are done by implementing plans as compared to the regular lectures in classrooms as education could not be possible in the current COVID19 pandemic if the online distance learning concept was not in the world. As remote teaching has already been used in different institutions but the idea was the same as the traditional in-person class environment. Researchers have concluded that the idea of online distance learning has provided greater flexibility and ability to the students so that they can work with pace while getting feedback from their mentors. Meanwhile, educational institutes also face some sort of irregular work schedules and the benefits of online distance learning are highlighted here once again. As it allows the complete access to course material and having regular schedules. The educational strategy implemented in online distance learning has overcome all of the faults the system was making before COVID19.

Quality issues in online distance learning occur when online learning starts giving relief to the users and providing complete access to the technology in respective institutes (Xu and Xu,2019). Educational institutes must have the ability to provide regular access to the computers or devices available at a student's home. Institutes are implementing the true concept of online distance learning as screen time in the classes is also reduced. Daily classes are conducted and screen time is reduced by the institutions so that less time will be taken by the class teacher to deliver the lecture and the session will come out as a productive one. However, quality issues in online distance learning face a drawback because in online open book exams there may be a chance of cheating while using digital tools (Esfijani, 2018).

Many institutes have overcome the issue by setting time for an exam where students could not get enough minutes to cheat. However, the issue here states that cheating would be more common in online distance learning than in regular classes. However, quality issues still state several ways to reduce the concept of cheating in online exams (Xu and Xu,2019). Quality

issues are also linked to the devices and learning systems available at home for the students. In previous researches, it was not common for a student to have an internet connection and device for online classes. However, it has become common and quite clear for the students to arrange quality broadband or internet at home to meet all of the essential requirements of the online distance learning program. Students have switched from remote computers to tablets or pads which are travel friendly. So that the learning option has made it easy for the student to work actually. Because of the high demand in the market, online learning platforms and applications are offering free access to the devices so that students can take their lectures online without paying anything (Kurilovas & Vinogradova, 2016). Mostly students intended to take online distance learning courses to avoid the educational expense and travelling cost. But introducing a cost-free platform where students can take their classes and exams is a great gesture for them. A recent study has revealed that Alibaba has provided learning solutions to the students through DingTalk where a huge level of remote work is supported. Another platform provided by Alibaba is Alibaba Cloud where more than 1 million new cloud users or serves can take part. However, the entrepreneur is setting a new record of absorbing a rapid capacity of students. Quality issues in online distance learning are allowing the students to meet their exponential growth and offering the teachers to deliver unlimited video calling time for the students (Bashir, 2016).

Online Distance Learning Acceptability Rate

The option of online distance learning has been divided into two sections as the acceptability rate is required. To know the acceptability rate researchers have divided the online distance learning into usefulness and perceived ease of use. The research studies have concluded that the capacity of new technology and latest advancements have increased the acceptability rate in online distance learning programs. However, the main effort required here is to implement the latest technology. Such a system helps increase awareness among people so that they adopt

the technology quickly. Some research studies have done the survey programs where the usefulness of online distance learning is recorded by asking some questions to the students who were enrolled in online distance learning programs. Research studies have concluded that the result of surveys was positive and showed a higher level of agreement that students accept the online distance learning program as they consider the use of technology beneficial (Engel,2019). The most frequent questions asked to the students were based on the quality of knowledge, acceptability rate, and the technological advancement along with high approval of ratings. Research studies have also found that there is no impact of online distance learning on the job performance as alps most both categories students show the same skills and knowledge. Survey reports also confessed the acceptance level of online qualifications in different institutions where students can further get admission. Further studies have revealed that quick and quantitative responses of students have shown that online distance learning has improved their learning power and skills. In many areas, it was considered that online distance learning qualifications are not acceptable by most of the professional organisations. But the reason is that uncertainty exists everywhere and several leaders have done online distance learning programs and they are working in a reputed organisation while having strong leadership qualities (Sadik,2016).

The research findings have concluded that a high level of acceptability rate is observed and the idea of taking more training through online distance learning is promoted by the youngsters. The attitude of students has become positive towards the online distance learning program. Most of the low-income countries have made quality and quantity analysis to understand the availability of funds regarding education. Those countries have contacted the richer countries to promote the online distance learning programs so that their students can learn and practice in their respective course field.

Another study has addressed two questions to the students going through an online distance learning program and the highest acceptability rate has been registered. The results are not surprising at all because of the advantages of online distance learning provided. However, the challenges are also faced during such programs which are discussed further (McGreal,2018)

Online Distance Learning Approaches

Because of the remarkable strategies implemented by online distance learning programs, the learning approaches are also needed to be considered once. Such approaches help meet the needs of online distance learning programs along with creating a business case where the necessary financial and economical help can be generated. However, the approach to online distance learning starts when the executive management agrees on starting such learning sessions and invests in the positive sector of education.

Reduction in Expense and Instructor's Time

Online distance learning courses allow learners and instructors to work on the same scenario while remaining in a short budget. Such students get access to the content without any cost and it enables the instructors to assign tasks to the students independently. Hence travel time and cost is also reduced while minimizing the staff expenses.

Economical Scale

Online distance approach helps improve the economy as it can attract the larger-scale audience and in-person courses. Thus, online distance learning helps increase revenue as organisations and institutes can create cost analysis programs quickly.

Content Modularization

Online distance learning courses are repackaged and reused while making a significant effort and it happens worldwide. Whereas, the traditional classroom setting does not go with the

course material repackaging and makes the instructors to set syllabus for the new terms every year. Thus, time and money both are saved due to the modularization of content.

Content Consistency

Online distance learning is helpful in every context as it allows learners to receive a capable amount of content that is related to the institutional course. Thus, the learning objectives and goals are kept in the system and the target is achieved through remarkable effort. Online distance learning is reinforced internally and externally among all of the education options.

Classroom Costs

Online distance learning is far away from the classroom sittings and daily class lectures as it does not require any sort of traditional classrooms. Hence, no buildings, no classrooms, and no entertainment facilities are needed which ultimately reduces the cost and helps in maintaining the learning requirements of the students.

Technological Advancement in Providing Online Distance Learning

Online distance learning has become possible and common due to the advancement and cheap internet technology as everyone has the internet in their approach. Many forms of online distance learning programs have become enabled due to the facility of the internet. Most of the educational facilities and learning resources are possible just because of technological advancement. However, internet expansion has eliminated the distances and students can gain education through online learning approach (Clarks,2020). In the online distance, learning participants are present at their webcams, mobile phones, or tablets to attend the lecture and the aura becomes the same as in the traditional classroom as the combined discussion is achieved (Syed,2020). Hence, technological advancement has allowed the students to undergo web conferencing, video calls, educational meetings, and many other forms of discussions. Students have got help from the web conferencing software where online distance learning

courses are added and such software provides extra tools and digital interactions where chat polls and hand-raising or emotions can be sent. However, such tools have made it possible for the students to share their emotional outcomes and they can listen to the recordings of others as well (Watts,2016). Online distance learning in the current pandemic situation has become a lot more advanced than before because of the coronavirus waves. Most of the applications launched are related to online distance learning where students can conduct their regular classes, discussions, and meetings with the teachers. Commonly used applications are Zoom and Team where combined meetings are called and students form their houses come and attend the class. The advancement lies in the fact that mobile phones also allow such applications to work (Syed,2020).

Moreover, teachers can also send emails, video messages, audio notes, or chats to the students so that they can go through the lecture once and overcome their educational loss. The oldest technology of online distance learning was based on delivery technology where audio or video chats were conducted to educate the students but in today's era, the technology has groomed and students have so many ways to attend their lectures instead of relying on one. Almost all universities and colleges have shifted to online distance learning in some of their courses. It has helped them to create a system of their own which is now helpful in COVID19 situation (Kem,2018).

Characteristics and Traits

Online distance learning has its characters and traits which cannot be neglected. The first character of online distance learning comes under the good management skills where management skills are developed and gained in the learning program, the online learning system itself is completely developed and managed where students can learn and can come up with their responsibilities (Hong et al.,2017). Preparing for exams and then giving online exams has become possible for everyone. Research studies have shown that basic technical skills are

considered an important characteristic of online distance learning because the learning environment has its protocols (Zheng et al.,2020). Students can go towards their modules and work to complete their assignments. Such techniques are the traits of online distance learning which must be acknowledged by everyone. Basic understanding of online distance learning systems and software is essential otherwise it would be difficult for the user to use such systems. The module must be handled by the student carefully as a single wrong submission can lead towards the failure of the student (Hamidi & Chavoshi,2018). Another trait of online distance learning comes under communication skills. If students need a relaxing and understanding environment they must undergo good communication skills so that they can communicate with the instructors and other participants in a professional way. The importance of communicating effectively in both writing and speaking is essential as if a student does not talk the instructor may find that the student is not capable of learning and he is not good at asking questions. Writing skills are necessary to be improved to create and write the content so that conveying a message becomes easy. Another character of online distance learning lies in self-direction awareness. The instructor provides maximum guidance but the student needs to look after his studies as well. The student must have enough knowledge regarding his module that he can write notes related to the assignments and can submit the tasks on time (Hong et al.,2017).

Similar Studies

Research studies on the topic of online distance learning have cleared everything in the minds of the readers. A research study on the literature review back in 2000 has identified that online distance learning shows an empirical growth of about thousands when it is introduced among the institutes (Ghilay,2017). Studies have concluded that face to face conversation during online distance learning is more appropriate if students want to understand their topics and the concepts used in their topics. Adequate information is delivered through online distance

learning which is essential for a student to pass on his exams (Zoborova et al.,2017). However, earlier studies on online distance learning have concluded that technologies were not advanced back then and they were significantly not appropriate at that time. An effective online distance learning approach was possible without even having an advanced technological system. Institutes have understood that traditional instruction is required if anyone wants to conduct an online distance learning program because it would make it easy for the students to understand how it works. Most of the research studies related to the topic have discussed that the study system is quite cost-effective and a huge amount of expense is reduced if institutes switch themselves to online distance learning sources (Gemmell & Harrison,2017). Further studies have revealed that with the advancement in technology, improvement in the studying system is observed. Internet-based online distance learning has been considered important among the students because the acceptability rate is quite higher than any other source (Zoborova et al.,2017). Another study has investigated the sections studied during online distance learning. A researcher has compared the courses of the online learning program and regular class learning. He has found that both of the course materials were the same however, online distance learning was found to be finishing the program in less time as compared to regular traditional classrooms (Weidlich & Bastiaens,2018). Instructors everywhere use the same material of course and same teaching style. Online courses are effective and make the student more efficient as he can work from home at the same time (Harrison et al.,2017). On the other hand, research studies have revealed that learning preferences have fluctuated among the students because every student has their preferences regarding the course material and objectives (Heidrich et al.,2018). Online distance learning is based on the courses, technology and the educational standard delivered by the teachers to the students. In earlier studies, technological advancement has not been considered as an important factor but in today's era, technology is the most important factor impacting online distance learning (Harrison et al.,2017).

Studies in Online Distance Learning Challenges

Online distance learning also faces various challenges that can cause a hurdle in the learning system across the globe. Technological challenges are at the top list of online distance learning because there is a huge problem for not knowing the technological advancements and having the latest gadgets where students can take lectures. Most of the institutes provide gadgets to the students but somewhere students have to take classes on their own. Smartphones are not available to everyone (De Paepe et al.,2018). Not everyone has access to the internet which causes a problem for the students to take their lectures. The important message to teachers is that they must go through the background of each student and see if they can afford and have access to an online teaching system or not. Their participation without any hurdle must be prioritised. In most of the areas, teachers and students do not cooperate (Charbonneau-Gowdy, 2018). Online distance learning courses provide a lot of advantages to the students but due to the lack of support from the teachers, students start avoiding their classes and stop showing interest in an online discussion. The situation becomes critical when teachers openly lack interest and do not care if the student is understanding the lecture or not. Both students and teachers become overloaded with the burden and they could not find any way to overcome their issues (Savage & Piwek, 2019). The support from the family members and surroundings are also essential. As during a class, background disturbance or any distraction is not affordable. Students lack interest when something is happening in the back. The curriculum is made according to students' choice and they must follow the rules of online distance learning programs (Gillett-Swan, 2017).

The main challenge lies in the motivation level among the students which depends on their engagement level in online classes. Students are if not motivated they face a huge fall in their grades which demotivates them (Kara et al.,2019).

Online Distance Learning in UAE

Research studies have shown that almost 47 bachelor programs are conducted through online distance learning in different universities of UAE. all universities have followed the protocols of online distance learning which has made it easy for the students to approach quality education in the current situation. UAE has focused on its online distance learning option a few months ago when almost 1300 schools and universities were closed because of the coronavirus wave (Atallah & Moussa-Inaty, 2016, March). The challenge was unpredictable like anywhere else in the world and the authorities of UAE have tried their best to maintain the education level by starting an online distance learning approach. For about one month, the educational institutes remained closed according to the official notices (Lee et al.,2017). But, online distance learning had to begin in march where the decision of delivering knowledge to the students was made. Schools and universities remain closed and their curriculum is continued online. As online distance learning will be continued until the end of the academic year. In the UAE, struggles have been made by the teachers and students because speaking and understanding English was difficult in that area and students to have to take lectures through applications where most of the features are in English. Everyone had to deal with the situation at that time. Teachers started creating lectures and slides for the students in an easy context and format while working overnight. Addressing from the class lectures to the discussion sessions, teachers have done a great job in managing the content of online distance learning. Teachers have delivered the concepts and theories regarding the course to the students (Alfy & David, 2017). However, the quality of attention provided by the students is not more than a blessing as students have corporate a lot in every context of an online distance learning education system.

Students who are not able to get the lesson regularly are provided with extra time as some students are more vulnerable than others. Educational institutes have assured that children with

special needs will be deceiving extra attention and lecture time so that their loss can be compensated (Awofeso et al.,2016).

The method of online distance learning has given a possibility to the UAE where this high-quality education system can be expanded. Students may not be physically present at their institutes but they are more relatable to the course delivered through an online distance learning system. Students have become globally independent after the usage of online distance learning commonly. In the present situation, the UAE has to adapt to technological advancement so that its education system remains continued unless the wave of COVID19 ends (Lee et al.,2017).

Theoretical Framework

The theoretical framework of the study has been presented as follows:
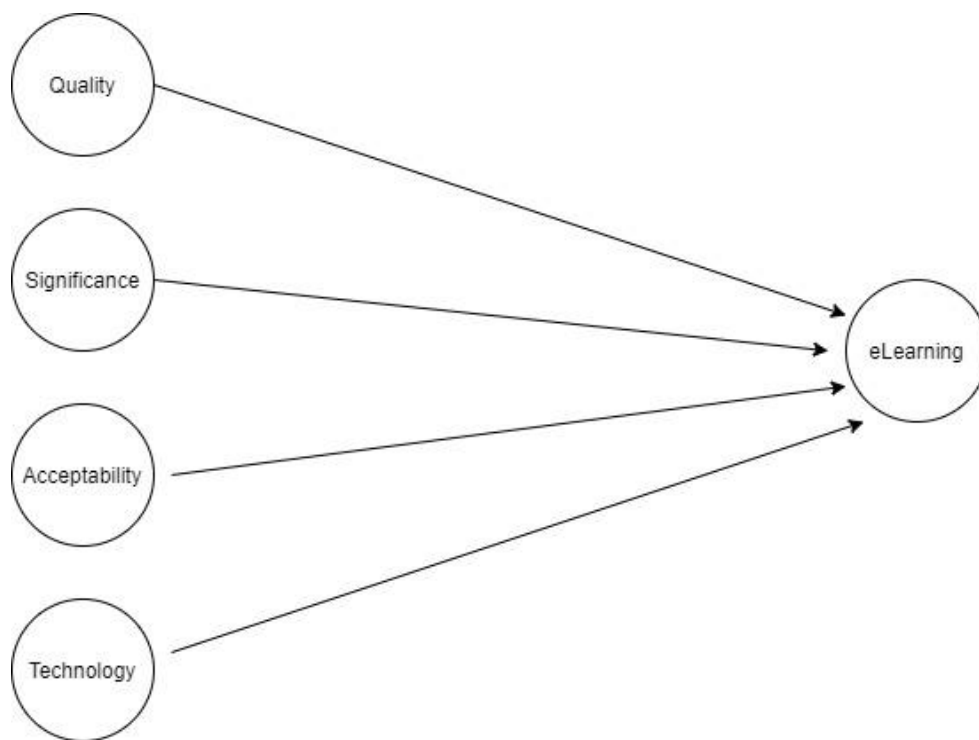
According to the theoretical framework of the study, there are a total of five variables which are listed as follows:

Sr. No.	Type	Name	Denoted by
1	Dependent Variable	eLearning	EL
2	Independent Variable	Quality	QL
3	Independent Variable	Significance	SF
4	Independent Variable	Acceptability	AC
5	Independent Variable	Technology	TK

The variables have been defined as follows:

- eLearning has been defined as teaching and learning activities performed with the help of internet and online sources.
- Quality is defined as the frequency of people considering online education useful.
- Significance is defined as relative importance given by people to the online education compared to traditional education.
- Acceptability is the rate at which people are ready to adapt online learning techniques.
- Technology is defined as the mode of communications used during the course of online learning.

Conclusion

The literature review section highlights the facts reading online distance learning along with an approach to the introduction behind the topic. The section describes what online distance learning is and how it is different from regular learning. The quality issues are highlighted with previous research studies and the work of different scientists is cited. research studies have also found that there is no impact of online distance learning on job performance as alps most both categories students show the same skills and knowledge. In online distance learning participants are present at their webcams, mobile phones, or tablets to attend the lecture and the aura becomes the same as in the traditional classroom as the combined discussion is achieved. Further sections will discuss the remaining part of the research study.

Chapter 3: Research Methodology

Introduction

The third chapter of this study is the research methodology which has been written to define and illustrate the methods and techniques used to reach the answers of the research questions. The objective of this study is to determine the major quality issues and the significance of eLearning techniques and how these techniques can be improved in terms of quality by using technology and other aids. In this research quantitative research design has been followed based on primary data. This chapter contains a review of the purpose statement of the study, research hypothesis, research design, research approach, selected research instrument, research validity and reliability and the ethical considerations in this regard.

Purpose Statement

The goal and aim of a study are identified from the objectives of that particular research. The overall objective of this study is to assess the quality issues related to online learning (eLearning) approaches and how students can be satisfied by using such approaches. The study aims to determine the significance and importance of eLearning along with the determination of quality issues related to the eLearning. In addition to it, the other objectives of the study are to determine the various methods of implementation of the eLearning program along with the acceptability rate of eLearning initiatives. Lastly, the study also aims to determine the impact of technology on eLearning platforms in this regard (Kumar, 2019).

Research Questions

A research process is performed to answer a specific set of questions which are to be answered after the review of the literature. In this study of quality issues of online learning, the following research questions have been raised (Mohajan, 2018):

- What is the significance of online distance learning?

- What are the key quality issues related to online distance learning?

- What are the key determinants of the implementation of successful eLearning initiatives?

- What is the possible acceptability rate of eLearning?

- What is the possible impact(s) of technology on the eLearning platform(s)?

Hence, the focus of the research questions of this study is towards the determination of quality and significance of online learning or eLearning platforms. The questions also attempt to answer the possible acceptability rate of eLearning in this regard and the impact of technology on eLearning platforms has been also ascertained. In the following section, research hypotheses have been developed (Snyder, 2019).

Research Hypothesis

A research hypothesis or just simply hypothesis is a testable, clear and specific statement and written in a predictive manner regarding the possible result of a scientific study. The scientific study is based on a population or a sample. When a scientific quantitative study is being carried out, the specification of hypotheses is critical (Snyder, 2019). There are several types of hypothesis but the two important forms are null and alternative hypotheses. When a researcher thinks that there is no relationship between the two variables of interest, then it is regarded as a null hypothesis and reflected by H_0. When the researcher attempts to disapprove the null hypothesis, the alternative statement presented is regarded as the alternative hypothesis in this regard. The alternate hypothesis is reflected by H_A. In this study, the null and alternative hypotheses have been written in the context of the theoretical framework as follows (Snyder, 2019):

H01: There is no relationship between eLearning and Quality.

HA1: There is a significant relationship between e-Learning and Quality.

H02: There is no relationship between eLearning and Significance.

HA2: There is a significant relationship between eLearning and Significance.

H03: There is no relationship between eLearning and Acceptability.

HA3: There is a significant relationship between eLearning and Acceptability.

H04: There is no relationship between eLearning and Technology.

HA4: There is a significant relationship between eLearning and Technology.

The hypotheses have been written on the basis of the expected relationship between the dependent and independent variables. The variables are re-classified as follows:

Sr. No.	Name of Variable	Description
1	eLearning	It has been measured by the responses in terms of online learning platforms.
2	Quality	It has been measured by using the questions asking quality of the eLearning services.
3	Significance	It has been measured by using the questions regarding the significance of the eLearning services.
4	Acceptability	It has been measured by using the questions regarding the acceptability of the eLearning services.
5	Technology	It has been measured by using the questions regarding the technology of the eLearning services.

The econometric form of the research variables in terms of dependent and independent variables has been done as follows:

$$Y_{EL} = \alpha + \beta_1 X_Q + \beta_2 X_S + \beta_3 X_A + \beta_4 X_T + \varepsilon_t$$

The above model has been explained as follows:

- EL is a dependent variable which indicates the eLearning.

- Q is an independent variable which indicates the Quality of eLearning.

- S is an independent variable which indicates Significance perception of eLearning.

- A is an independent variable which indicates Adaptability rate of eLearning.

- T is an independent variable which indicates Technological inputs of eLearning.

A dependent variable is one which relies on some other variable for its outcome. The independent variable of a study doesn't dependent on any other variable for its outcome. This study contains one dependent variable and five independent variables in this regard.

Descriptive Statistics

Statistics concerns with the procedures that used to collect, appraise and evaluate the data in order to come to the conclusion. Descriptive Statistics is one of the main type of statistics in which the basic features of the under study data are defined and elaborate. In simple words, descriptive statistics tell us what is going on in under study data or what the data tends to show. Quantitative data can be present in a convenient/manageable format by using descriptive statistics. A researcher has to manage a large number of data and measurements during the research. In that situation, descriptive statistics assists the researcher to simplify and summaries that large number of data in such a way that its user can easily interpret that what the data actually exhibits. Measures of central tendency (mean, median and mode), measurement of dispersion (standard deviation, variance and ranges), measurement of skewness and kurtosis all comes under the descriptive statistics. For example: if we want to know the living standard of a local community on the basis of their income then the average income of all households in that community may help to determine the overall living standard of that community. In that case, measurement of central tendency (average of all households' income) is used in order to

get the summaries picture of overall community living standards. Like ways, Grade Point Average (GPA) is the single figure that exhibits the average performance of the student throughout its college course. In descriptive statistics, the data or measurement can be present either graphically or in tabular format. Although descriptive statistics is useful in many ways however, there are also some limitations while using descriptive statistics. Descriptive statistics usually gives only average or summation of all measurement/data which may not be generalized. In given example there may be some households which may earned very low income while the overall average shows the significant income levels.

Cross Tabulation Analysis

Cross-tabulation is a quantitative method that is used to study the interconnection between various variables and a better understanding of the correlation between these variables is acquired. Cross-tabulation also known as contingency tables indicate in what way the correlations between the variables change from one grouping of a variable to another. The data table shows rows and columns as codes to the axis that specify one or more variables. These data tables represent the results of the data obtained through multiple surveys conducted both of the entire groups of participants of the survey and the sub-groups of the survey participants as well. Connections within the data that are not obvious are easily identified which is useful especially while doing market research. The tools or software used for the cross-tabulation of data are mostly Microsoft Excel, SAS, and SPSS, of which the most popular is SPSS but the level of analyzation and degree of pivot table present in Microsoft Excel cannot be found anywhere else (Raghu, Gilmer, Yosinski & Sohl-Dickstein2017).

Correlation Analysis

Correlation analysis is a widely used research tool and statistical method which helps to evaluate the relational strength of two variables. Correlation between two variables is measured with the help of correlation coefficient and the value of the correlation coefficient is between -

1 to +1. A correlation coefficient near to +1 is regarded as a strong and positive correlation whereas a correlation near -1 is regarded as a strong negative correlation.

Regression Analysis

Inferential Statistics is the branch of statistics which enables us to do predictions after analysing and evaluating the data which is usually taken from the sample of a population. One of the common procedure/method which is used in inferential statistics is Regression Analysis. The main usage of regression analysis is defining the impact of independent variables (predictors), predicting that impact and trend of that forecasting. Famous German mathematician Carl Friedrich Gauss was the inventor of statistical regression back to eighteenth century. Regression analysis is a statistical method in which relationship between the variables i.e. dependent variable (whose value varies or dependent on other variables) and one or more than one independent variable (whose value does not depend on other variable) can be determined/established. Dependent variable is also known as outcome variable while independent variable known as features or predictors. Regression analysis is the powerful statistical technique which identifies the variables that have effect/impact on study of interest. By going through regression analysis we can define that which variables have most significant impact, which variables have least effect and which variables and factors may be ignored. Regression analysis also determine the influence of these variables/factors on each other. Regression analysis helps the researcher with details that can be applied in order to improve the under study product and/or services. There are several types/models of regression analysis which may choose on the basis of the type of dependent variable data and adopted model that seems fit for the research. Linear regression, polynomial regression, logistic regression, lasso regression and ridge regression are the few types of regression analysis. However, linear regression is the model which is most commonly used while conducting regression analysis. Regression analysis fails to provide desired results if the assumptions of researcher limit the

data, wrong question develop for research, if there is any overlap between dependent and independent variables and when data for regression model is poorly collected and managed.

Reliability Analysis

Reliability refers to the consistency of the results achieved when a test or a research study is replicated, whether or not the results obtained from the first study turned out to be the same when conducted again. Reliability analysis is a method to know the construct of a particular scale being used in a study which is quite beneficial in certain circumstances. Its importance is recognized by how it's used in the initial stages of determining and evaluating the dependable values like concept, design, and maintenance phases. An example of the usage of reliability analysis comes when a researcher wants to check the reliability of two observations underway that are similar to each other and even generate results that are alike. One of the well-known techniques of reliable analysis is the split-half reliability where the data is split into two parts. If the results of a scale are especially reliable then the first half of the data is the same as the other half (Schroeder, Sjoquist & Stephan, 2016).

Research Design

The structure used for the research procedures and techniques that the researchers choose is known as the research design. The research design lets the researchers turn towards such researching techniques and methods appropriate for the subject and help them set up the materials for their study. The category and the sub-category of the research are elaborated by the research design. According to the studies, research designs are of three major categories that include the collection of data, measurement, and then analysing that data. The research design has different characteristics, but four essential characteristics are neutrality, reliability, validity, and generality (Ørngreen & Levinsen, 2017).

Neutrality usually explains that the results that are predicted by the research design should be not biased; instead, they should be neutral. The opinions which are following the results should be considered and evaluated. Reliability helps the research design to generate such questions which guarantee the standards of results. The validity of the questionnaire is only ensured if the tools used in the design are correct. Generalization means that the research design result should consider a general population but not a specific sample. This generality character tells that the research can be applied to any part of the population without any discrepancy (Ørngreen & Levinsen, 2017).

In this study, the research design is based on primary data which have been collected through a structured questionnaire relevant to the research variables. The design employs the use of descriptive statistics such as mean, median and maximum approaches along with the correlation and regression analysis in this regard (Ørngreen & Levinsen, 2017).

Research Approach

Quantitative Approach

The quantitative research approach is usually demonstrated in figures and graphically. This approach is applied when the research paper's focus is to evaluate or verify the theories and presumptions. A quantitative research approach can be utilized to develop general details about a topic. The usual quantitative techniques involve evaluations, observations written down as figures, and the studies without open-ended questions (Wiek & Lang, 2016).

The quantitative approach of data collection techniques includes surveys, experiments/evaluations, and observations. The surveys are done by collecting the data from different people through a series of close-ended questions or the M.C.Q.s (multiple choice questions). Then the evaluation or the experimentation generates the cause & effect relation of

the data collected. The quantitative approach observations are made in such an environment where the variables cannot be manipulated (Wiek & Lang, 2016).

In this study, the quantitative research design has been used to analyse the research problem. There are some benefits of using the quantitative research design. For example, higher sample size can be obtained when the quantitative design is used. Secondly, the information collection process becomes fast when the quantitative approach is used. Thirdly, randomized samples can be used when a quantitative research design is followed. Fourthly, a researcher can focus on a fact or series of information when quantitative research design is used (Taherdoost, 2016).

Research Instrument – Questionnaire

A researcher to collect data or information regarding his potential research can use a tool which is referred to as the research instrument. The survey instrument is used in primary research where primary data is to be collected and the types of survey instrument include checklists, tests, interviews, surveys and questionnaires (Taherdoost, 2016). Once the conceptualization process is completed, then the research instrument is selected. There are several features of a good instrument including that it should be reliable and valid. Secondly, it should be able to connect the variables of the study based on the conceptual framework. Thirdly, relevant and suitable research data must be collected in this regard (Taherdoost, 2016). Fourthly, the instrument must be able to validate the research hypothesis. Lastly, the instrument must be free of bias in the given context. In this study, a structured survey questionnaire has been used for data collection. The questionnaire contains closed-ended questions designed on a 5 point Likert scale. The survey instrument has been given as follows (Taherdoost, 2016):

Variable	Questions
eLearning	1) Do you think that eLearning is a substitute for the traditional form of learning?
	2) Do you prefer to use eLearning in place of traditional learning form?

Quality	3) Do you think the quality of education is affected as a result of eLearning?
	4) Do you think the quality of education is improved as a result of eLearning?
Significance	5) Do you think eLearning has brought major changes to the educational landscape?
	6) Do you think after COVID-19 eLearning usage will reduce?
Acceptability	7) Do you think eLearning has been a successful adaptation?
	8) Do you think the acceptance rate of eLearning will increase?
Technology	9) Do you think technology is the main driver of eLearning?
	10) Do you think a change in technology will bring further changes to eLearning?

These questions are to answer based on a 5-point Likert scale and the options are as follows:

1. Strongly Agree

2. Agree

3. Neutral

4. Disagree

5. Strongly Disagree

Sample Size and Approach of Sampling

The sample is considered as a representative part of the population which have all the features of the population in this regard. The sample size of this study is 100 and it contains the individuals belonging to the various educational institutes. The population of the case is the teachers and students of educational institutes in this case. The sample has been designed by considering the following features:

● Age

● Gender

The reason for adding demographic variables is that it can help to make comparison with other variables using tools like cross-tabulation in the given case.

Research Validity and Reliability

The validity and reliability are the ideas used to estimate the standard and attributes of the research paper. These two characteristics show how good a technique, procedure, or the experiment calculates something. Reliability tells all about the stability and regularity of a test, whereas the validity explains the test's precision. Reliability elaborates on the fact of how regularly a technique tests something. If the same technique achieves the same results on different trials but under the same conditions, then the estimation is reliable. High reliability indicates the fact that a test is valid. If the technique does not prove reliable, then it is an indicator that it might not be valid. Although reliability alone is not sufficient enough to guarantee validity. It is also a probability that a test might be reliable, but it still is not accurate enough to reflect the actual condition (Catlett, Beckman, Sankaran & Galvin, 2017).

Validity explains that how precisely a technique or a procedure estimates that is intended to be determined. If the research paper shows a high level of validity, then it means that results produced by this technique are in correspondence with the real characteristics, attributes, and discrepancies in the physical world. Validity is more critical, but it can be harder to evaluate as compared to reliability. To get the appropriate and beneficial results, the techniques used to assemble the data should be valid: the research ought to be estimating what it has claimed to evaluate (Stupnisky, Hall & Pekrun, 2019).

In this study, validity and reliability tests have been performed in the data analysis and interpretation section. Using IBM SPSS, the Cronbach's alpha has been calculated to perform the reliability and validity tests of the data.

Ethical Considerations

Research participants are to be provided protected ethically and should not be harmed in any way. The research participants should be given respect, and this thing should be the top priority.

The consent of the participants is required before starting the study. The consent form involves giving enough data and guarantee to the participants about the research study. The privacy of the research participants should not be violated (Nico, 2016). The research data should be confidential, and the anonymity should be maintained throughout the study. The aims and goals of the research paper should be clearly defined before the research, and any deception about it should be avoided. All the funding of research, affiliated parties, and anticipated conflicts should be declared as well. The communication regarding the research paper should be clear and transparent. Biasness of the study should be avoided to keep the research paper authentic (Nico, 2016). The respondents should be willing to participate. They should be given the liberty to draw out their names at any time during the study. The questionnaire formulated should consider the ethics regarding the language, i.e., offensive or biased language should not be used. All the work copied from the other writers should be acknowledged by the Dissertation Handbook. The analysis should be objectified throughout the study to maintain the standard of the research (Mulholland, 2016).

Conclusion

Hence, from the above discussion, it has been concluded that the methodology of a research process serves the purpose of a backbone. This study uses a quantitative research design based on primary data and employs a sample selected on the basis of a randomized approach. A survey instrument based on a structured closed-ended questionnaire has been utilized when all ethical considerations have been accounted for. The methodology will help to establish a link between the findings of the study and the previous literature regarding the efficiency of eLearning.

Chapter 4: Data Analysis and Results

Introduction

The overall objective of this study is to determine the significance and essence of eLearning platforms and how the matter of eLearning is influenced as a result of quality, technology and acceptability in a given case. This section of the study is based on the data analysis and as mentioned earlier, this study has been performed based on primary data collected from a population of 100 individuals with the help of a closed-ended survey instrument. The quantitative approach of data analysis has been selected in this study and this chapter contains the data analysis performed with the help of IBM SPSS. The key tools of data analysis used are descriptive statistics, cross-tabulation analysis, correlation analysis, regression and reliability analysis in the given case.

Quantitative Data Analysis

The quantitative data analysis, in this case, has been performed using IBM SPSS. The data of 100 respondents was collected using a structured questionnaire and then later processed using the software. The key outputs and interpretations of the analysis are given as follows:

Descriptive Statistics

In this study, the descriptive statistics have been presented in the following table and it can be seen that the minimum, maximum, mean and standard deviation of the variables has been computed. It is visible that the average of age is 2.23, of gender, is 1.46, of eLearning, is 3.53, of quality, is 3.42, of significance, is 3.41, of adaptability is 3.50 and of technology is 3.59. Hence, the average inclination of the participants towards the eLearning and other related variables is towards disagreement (Gogtay & Thatte, 2017). The total number of respondents

in this study were 100 in the given case and all of them participated in the survey thus there are no missing values.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	100	1	4	2.23	.874
Gender	100	1	2	1.46	.501
eLearning	100	1	5	3.53	1.344
Quality	100	1	5	3.42	1.357
Significance	100	1	5	3.41	1.364
Adaptability	100	1	5	3.50	1.299
Technology	100	1	5	3.59	1.240
Valid N (listwise)	100				

Cross Tabulation Analysis

In the following table, the cross-tabulation between age and quality of education has been performed and the majority of the age groups disagree with the statement regarding the quality of education. Only 13 people show their agreement in strongest terms, 17 of them are agree, 8 respondents are neutral, 39 disagree and 23 strongly disagree to the case.

Age * Quality Crosstabulation

Count

		Quality					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Age	18-25 Years	0	6	1	10	5	22
	25-35 Years	4	3	4	15	14	40
	35-45 Years	9	6	2	10	4	31
	45 Years and Above	0	2	1	4	0	7

Total		13	17	8	39	23	100

In the following table, the cross-tabulation between age and significance of eLearning has been performed and the majority of the age groups disagree with the statement regarding the significance of eLearning. Only 13 people show their agreement in strongest terms, 18 of them are agree, 7 respondents are neutral, 39 disagree and 23 strongly disagree to the case.

Age * Significance Crosstabulation

Count

		Significance					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Age	18-25 Years	2	3	1	11	5	22
	25-35 Years	5	9	3	13	10	40
	35-45 Years	6	4	2	13	6	31
	45 Years and Above	0	2	1	2	2	7
Total		13	18	7	39	23	100

In the following table, the cross-tabulation between gender and adaptability of eLearning has been performed and the majority of the gender groups disagree with the statement regarding the adaptability of eLearning. Only 10 people show their agreement in strongest terms, 17 of them are agree, 10 respondents are neutral, 39 disagree and 24 strongly disagree to the case.

Gender * Adaptability Crosstabulation

Count

		Adaptability					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Gender	Male	7	10	7	15	15	54
	Female	3	7	3	24	9	46
Total		10	17	10	39	24	100

In the following table, the cross-tabulation between gender and technology of eLearning has been performed and the majority of the gender groups disagree with the statement regarding the technological influence of eLearning. Only 7 people show their agreement in strongest terms, 18 of them are agree, 9 respondents are neutral, 41 disagree and 25 strongly disagree to the case.

Gender * Technology Crosstabulation

Count

		Technology					Total
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Gender	Male	4	8	6	19	17	54
	Female	3	10	3	22	8	46
Total		7	18	9	41	25	100

Correlation Analysis

In the following table, the correlation between eLearning and Quality variable has been presented which is 0.823 and significant at a level of significance of 0.01. It is an indication of strong correlation in the given scenario.

Correlations

		eLearning	Quality
eLearning	Pearson Correlation	1	.823**
	Sig. (2-tailed)		.000
	N	100	100
Quality	Pearson Correlation	.823**	1
	Sig. (2-tailed)	.000	

		N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

In the following table, the correlation between eLearning and Significance variable has been presented which is 0.646 and significant at a level of significance of 0.01. It is an indication of moderate correlation in the given scenario.

Correlations

		eLearning	Significance
eLearning	Pearson Correlation	1	.646**
	Sig. (2-tailed)		.000
	N	100	100
Significance	Pearson Correlation	.646**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

In the following table, the correlation between eLearning and Technology variable has been presented which is 0.386 and significant at a level of significance of 0.01. It is an indication of a weak correlation in the given scenario.

Correlations

		eLearning	Technology
eLearning	Pearson Correlation	1	.386**
	Sig. (2-tailed)		.000
	N	100	100
Technology	Pearson Correlation	.386**	1
	Sig. (2-tailed)	.000	
	N	100	100

**. Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

In this study, the model summary has been presented in the following table indicating a coefficient of determination of 0.765 which means 76.5% of the variation in the dependent variable is explained by independent variables keeping all factors constant. It shows a higher level of significance between the variables. The value of adjusted R-square is less than R-square and the standard error of the estimate is 0.666 (Reynolds & Irwin, 2019).

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.875[a]	.765	.755	.666

a. Predictors: (Constant), Technology, Significance, Adaptability, Quality

The ANOVA table has been presented as follows and p-value, in this case, is less than 0.05 which indicates the overall model is a good fit.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	136.825	4	34.206	77.214	.000[b]
	Residual	42.085	95	.443		
	Total	178.910	99			

a. Dependent Variable: eLearning

b. Predictors: (Constant), Technology, Significance, Adaptability, Quality

In order to validate the hypotheses of this study, the individual coefficients can be tested as per their level of significance. It can be seen that the quality is significant at a level of significance of 0.05 which means that we reject the null hypothesis H01. H02 is also rejected as the variable of significance is significant at 0.05 in this case. H03 has been failed to reject as the p-value of the adaptability is 0.446 which is greater than 0.05. H04 has been rejected as the variable of technology is significant at a level of significance of 0.05 in this case.

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-.218	.272		-.801	.425
Quality	.602	.065	.608	9.230	.000
Significance	.291	.077	.296	3.786	.000
Adaptability	-.052	.068	-.050	-.766	.446
Technology	.244	.058	.225	4.234	.000

a. Dependent Variable: eLearning

The overall conclusion from the regression and correlation analysis can be made that there is a strong association between the variables of the study and eLearning is influenced significantly by quality of the education, significance and the technology used (Daoud, 2017).

Reliability Analysis

In this study, the reliability analysis has been performed using Cronbach's Alpha. The case processing summary indicating the inclusion of 100 observations has been given below.

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

The Cronbach's Alpha has been given as follows indicating the value of 0.678 which states a moderate level of internal consistency of data based on 7 variables (Levine, Jørgensen, Martino-Andrade, Mendiola, Weksler-Derri, Mindlis & Swan, 2017).

Reliability Statistics

Cronbach's Alpha	N of Items
.678	7

Conclusion

Hence, from the above discussion, it has been concluded that the eLearning approach of teaching is influenced significantly by significance, quality and the variable of technology. There is a higher level of association between the variables which is validated by the coefficient of determination as well. The internal consistency is moderate as per the Cronbach's Alpha. Based on the findings of the study, the conclusion and policy implications have been presented in the next chapter.

Chapter 5: Conclusion

Key Findings

The final chapter of this research is based on the findings of this study and presents the key limitations and recommendations building on these findings. The objective of this study was to broadly analyse the quality and other related issues of the online learning and how these issues can be resolved with the help of certain techniques. It was hypothesized that the eLearning or online learning is influenced by factors such as the quality of the learning, the perceived significance of the learning, the acceptability rate and the type of technology used for the purpose of learning. In the following paragraphs, the key findings of this study are summarized.

Firstly, it has been assessed on the basis of primary data that there is a significant statistical relationship between the variable of eLearning and the quality of the education (since p-value < 0.05). An inference can be drawn based on the finding that if the quality of online learning is increased by using certain techniques it can lead to the improvement of the online distance learning in this regard. The alternate inference is that when the quality of online learning will deteriorate, the effect on the level of eLearning will be negative in the given case.

Secondly, on the basis of primary data research it has been assessed that there is significant relationship on statistical grounds between eLearning and the perceived significance of eLearning (since p-value < 0.05). It has been found that if the target population has a positive perception regarding the eLearning, then the idea of online learning can fly and become successful. Contrarily, if the perception regarding online learning in the mind of population is negative, then the idea of online learning may not be successful.

Thirdly, on the basis of primary data research it has been assessed that there is an insignificant relationship between adaptability of eLearning and eLearning (as p-value < 0.05). It means that

there is no association between the variables of the study in this regard and an alternative view can be established that when there is an increase in the acceptability rate of eLearning, it will increase the use online learning methods as a measure of teaching and vice-versa.

Fourthly, on the basis of primary data research it has been assessed that there is a significant relationship between technology and eLearning in this regard. The p-value in this case is also less than 0.05 which implies that when the level of technology increase or there will be a technological advancement, eLearning will flourish and vice-versa.

Hence, the overall findings of the study based on a coefficient of determination of 76.5% indicate that there is strong association between the dependent and independent variables of the study. This study used quantitative research approach which helped to reach at a quantifiable conclusion in terms of quality issues in online learning. In the following section, the key limitations of the research have been described.

Limitations

A research is not a final verdict regarding a proposition or a hypothesis and there always a chance of some differences and variances which could lead to become potential restraints influencing the outcomes of the study. These are referred as the research limitations. The key research limitations are listed as follows:

1. **Sample Related Issues** – When a probability-based sampling error is used, then there is a chance of sampling error in a given case. So, the error generated as a result of it is known as selection bias or sampling bias. In this study, the outcomes of the research can get influenced as a result of selection bias due to the use of primary data.

2. **Small Sample Size** – Sample size is an important part of research process as an inadequate sampling size can lead to wrong or improper research results. A sample size which is too small can lead to error as well as a large sample size may provide some

different results. Hence, this study also contains the limitation of sampling size as when a larger sample size is used, the outcome can potentially change.

3. **Lack of Previous Research** – When a research topic is relatively new and there is not enough previous research available, then the formulation of a research hypothesis becomes an issue. Hence, this research also has a limitation due to the non-availability of the previous studies specifically highlight the issue of online learning in relation to COVID-19 pandemic.

4. **Research Methodology** – This research is based on primary data and quantitative approach but the outcome of research can potentially change when there is a different approach used. For example, when mixed methods or qualitative approach of study is used, the results of the study can potentially change.

5. The other limitations of the study include limited data access, time constraints and issues related to personal and cultural bias.

Recommendations

Online learning has taken the world by storm. Since the start of the pandemic, it was notified that children and the elderly are the most vulnerable to get infected with COVID and experience higher risk factors than the rest of the population. Therefore, as part of the necessary measures taken by every government around the world, schools and other educational institutes were temporarily closed. And where everyone continues to hope that situation everywhere around the world gets better, we don't know when they will.

But it's been more than six months and where educational institutes are closed off, education can't be. So, the only solution is to start online learning through various platforms like Zoom, Google meet, and WhatsApp. All students get logged on at the same time as their classes on their gadgets and listen to pre-recorded or live lectures, do their homework, and get it checked.

Online learning wasn't needed or important before the pandemic therefore not a lot of them were optimized in a way to provide efficient learning and teaching. There can be plenty of ways online teaching and a learning platform can be improved to counter the problems both students and teachers come to face. The findings of the study illustrate some specific recommendations as follows:

- Based on the findings, it has been observed that the adaptability rate of the eLearning on average is 3.50 and that of technology is 3.59. It shows a higher level of disagreement towards the acceptability and adaptability of the eLearning approaches. The average inclination of the respondents is towards eLearning is in disagreement so it is required that the inclination rate through awareness and explaining benefits of eLearning must be illustrated in this regard. This is also in line with the findings of Xu and Xu (2019) in which they indicate that due to the factor of cheating the stakeholders may not have recognized online learning as a meaningful way of teaching.

- Majority of age groups showed disagreement towards the quality of education and people of middle and higher age groups have shown disagreement with the usefulness and quality of online education which is a matter of concern. It is recommended that the online service providers must introduce user-friendly versions of their software so that people of older age can understand the use cases of eLearning easily. These findings are consistent with the explanation of Xu and Xu (2019) which indicated that quality issues can arise when people see online teaching system just as another video-conferencing approach.

- Based on gender segregation, it is recommended that the male and female both should be educated regarding the benefits of eLearning as a higher level of disagreement based on gender classification has been observed.

Based on the findings of this study, some generic recommendations are listed as follows:

Create Rules to Take Online Classes

This is a method that every teacher can introduce to their students. Teachers can talk about certain norms with which they can provide a better understanding of the class, course, or subject to their students. These rules could be:

- To only unmute their mics when they want to say, ask or, participate in the class.

- During a lecture, if anyone has a question, they want to ask the professor or teacher can 'Raise their hand' by using the option given in Zoom.

- Or type in the question in the chat enabled by the teacher instead of interrupting the teacher mid-hand of the lecture or class.

- To come in with a proper outfit during live classes when a webcam is turned on.

Easy Access to Online Learning Material

Many websites for online learning online management systems (LMS) have been separately created for their students with proper login accounts. In LMS sites like these materials of lectures are provided and attendance is taken. But the problem that comes with websites like these are that they could stop working or keep freezing when a number of students try to log in. Therefore, students are unable to access material they immediately need or have an attendance they need to mark before their class time is up.

- In this case, teachers can email the notes or material to students and similarly, the students can send in their work through the mail.
- Or an online learning platform can be designed and created solely for the purpose of learning where assignments and material can be submitted and viewed easily.

Simple Navigation Systems

Navigations or apps like Zoom, Google Classroom, Schoology, Microsoft Teams, or Brightspace should be made easy so that students can have easy access. To make navigation

easier for children of all age factors particular navigation aids can be designed better and should be visible. These navigation aids include:

- Buttons

- Icons

- Arrows

- And copy written text

The easier navigations are for a website or an app the easier it is for students to understand.

eLearning Materials Should Be Easy to Understand

There's plenty of material on the internet, therefore, sending in excessive material from the internet to the students can be quite overwhelming and they will lose their interest in actually studying the subject or course. This situation can be easily handled by the teacher in simply choosing selective information that is to the point and concise so that the student can understand in one go.

Use of Images, Charts, And Graphs

Another way to improve the online learning platform is by using images, graphs, and charts. Visual information does a much better job of delivering information, offering a better and quick understanding. These items when combined should be able to be consistent in conveying the message or information. Website or sites can be created that provide relevant material for students of each grade.

Design Weekly or Monthly Quizzes

Quizzes or tests can be designed with the help of the teachers that can be posted which will help students keep up, revise, and go through any material or area they are lacking in. Online learning platforms can be improved by designing quizzes or tests that the students can access to check on their learning. But this is where reliability comes into question whether the kids

are answering in all honesty or by getting help from elsewhere. The role of parents come in action during these times. It's essential for parents to be the teacher at home and keep an eye out on their children that is whether or not they are doing their work truthfully.

Research Conclusion

Hence, based on the findings of this research, analysis of data, review of previous literature and limitations, it can be stated that online or eLearning has its effectiveness in the society despite of some issues and difficulties. During the COVID-19 pandemic, the usefulness of online learning has significantly increased and the future direction of education has been set by this pandemic as reliance on online means will significantly increase in near future. Although, it will not completely overtake the traditional means of education, but still it will have its importance increased day by day. By following the suggested recommendations, the shortcomings of the online learning methods can be fixed in this regard.

References

Ademola, A., Stella, A., & Esther, A. O., 2019. Improving Employability through Open, Online and Flexible Learning Environments: A Case Study of Distance Learning Institute, University of Lagos, Nigeria.

Alfy, S.E. and David, S.A., 2017. Investigating organisational justice in higher education in UAE. *International Journal of Management in Education*, *11*(2), pp.163-187.

Atallah, F., & Moussa-Inaty, J.,2016, March. Significant Predictors of e-Learning Readiness for Faculty and Students in a Public University in the UAE. In *Society for information technology & Teacher Education International Conference* (pp. 3144-3149). Association for the Advancement of Computing in Education (AACE).

Awofeso, N., Hassan, M., & Hamidi, S., 2016. Individual and collaborative technology-mediated learning using question & answer online discussion forums–perceptions of Public Health learners in Dubai, UAE. *Open Learning: The Journal of Open, Distance and e-Learning*, *31*(1), 54-63.

Bashir, A., 2016. WHY DISTANCE LEARNING PROGRAMS FAIL TO BRING QUALITY: A CASE STUDY OF AN ONLINE DISTANCE LEARNING PROGRAM IN PAKISTAN. *International Journal of Distance Education and E-Learning*, *1*(2).

Catlett, C. E., Beckman, P. H., Sankaran, R., & Galvin, K. K., 2017, April. An array of things: a scientific research instrument in a public way: platform design and early lessons learned. In *Proceedings of the 2nd international workshop on the science of smart city operations and platforms engineering* (pp. 26-33).

Chandrasekaran, S., Thiruvenkadam, T., & Subrahmanian, M., 2019. IMPACT OF ONLINE LEARNING ON TEENAGERS BUYING BEHAVIOUR. *The Online Journal of Distance Education and e-Learning*, *7*(2), 89.

Charbonneau-Gowdy, P., 2018. Beyond Stalemate: Seeking Solutions to Challenges in Online and Blended Learning Programs. *Electronic Journal of e-Learning*, *16*(1), 56-66.

Clark, J. T., 2020. Distance education. In *Clinical Engineering Handbook* (pp. 410-415). Academic Press.

Daoud, J. I., 2017, December. Multicollinearity and regression analysis. In *Journal of Physics: Conference Series* (Vol. 949, No. 1, p. 012009). IOP Publishing.

De Paepe, L., Zhu, C., & Depryck, K., 2018. Online language teaching: Teacher perceptions of effective communication tools, required skills and challenges of online teaching. *Journal of Interactive Learning Research*, *29*(1), 129-142.

Demouy, V., Jones, A., Kan, Q., Kukulska-Hulme, A., & Eardley, A., 2016. Why and How Do Distance Learners Use Mobile Devices for Language Learning?. *The EuroCALL Review*, *24*(1), 10-24.

Dockter, J., 2016. The problem of teaching presence in transactional theories of distance education. *Computers and Composition*, *40*, 73-86.

Engel, C. J., 2019. THE ACCEPTABILITY OF ONLINE DEGREES IN ACCOUNTING: A LITERATURE REVIEW. *Global Journal of Business Pedagogy*, *3*(1), 10.

Erickson, M. J., & Larwin, K. H., 2016. The Potential Impact of Online/Distance Education for Students with Disabilities in Higher Education. *International Journal of Evaluation and Research in Education*, *5*(1), 76-81.

Esfijani, A., 2018. Measuring quality in online education: A meta-synthesis. *American Journal of Distance Education*, *32*(1), 57-73.

Ferdig, R., Archambault, L., Rice, K., Niess, M., Litz, T., Garrett-Dikkers, A., ... & Davis, A., 2017, March. SITE Joint SIG Symposia: A Collaboration Between the K-12 Online Learning

SIG and Distance Learning SIG: How Higher Education and K-12 Online Learning Research Can Impact Each Other. In *Society for Information Technology & Teacher Education International Conference* (pp. 635-639). Association for the Advancement of Computing in Education (AACE).

Gemmell, I., & Harrison, R., 2017. A comparison between national and transnational students' access to online learning support materials and experience of technical difficulties on a fully online distance learning master of public health programme. *Open Learning: The Journal of Open, Distance and e-Learning*, *32*(1), 66-80.

Ghilay, Y., 2017. ODL: Online Distance Learning of quantitative courses in higher education. *Advances in Social Sciences Research Journal*, *4*(18).

Gillett-Swan, J., 2017. The challenges of online learning: Supporting and engaging the isolated learner. *Journal of Learning Design*, *10*(1), 20-30.

Gogtay, N. J., & Thatte, U. M., 2017. Principles of correlation analysis. *Journal of the Association of Physicians of India*, *65*(3), 78-81.

Grau-Valldosera, J., Minguillón, J., & Blasco-Moreno, A., 2019. Returning after taking a break in online distance higher education: from intention to effective re-enrollment. *Interactive Learning Environments*, *27*(3), 307-323.

Gregori, P., Martínez, V., & Moyano-Fernández, J. J., 2018. Basic actions to reduce dropout rates in distance learning. *Evaluation and program planning*, *66*, 48-52.

Hamidi, H., & Chavoshi, A., 2018. Analysis of the essential factors for the adoption of mobile learning in higher education: A case study of students of the University of Technology. *Telematics and Informatics*, *35*(4), 1053-1070.

Harrison, R., Hutt, I., Thomas-Varcoe, C., Motteram, G., Else, K., Rawlings, B., & Gemmell, I., 2017. A Cross-Sectional Study to Describe Academics' Confidence, Attitudes, and Experience of Online Distance Learning in Higher Education. *Journal of Educators Online*, *14*(2), n2.

Heidrich, L., Barbosa, J. L. V., Cambruzzi, W., Rigo, S. J., Martins, M. G., & dos Santos, R. B. S., 2018. Diagnosis of learner dropout based on learning styles for online distance learning. *Telematics and Informatics*, *35*(6), 1593-1606.

Heidrich, L., Barbosa, J. L. V., Cambruzzi, W., Rigo, S. J., Martins, M. G., & dos Santos, R. B. S., 2018. Diagnosis of learner dropout based on learning styles for online distance learning. *Telematics and Informatics*, *35*(6), 1593-1606.

Heidrich, L., Barbosa, J. L. V., Cambruzzi, W., Rigo, S. J., Martins, M. G., & dos Santos, R. B. S., 2018. Diagnosis of learner dropout based on learning styles for online distance learning. *Telematics and Informatics*, *35*(6), 1593-1606.

Holmes, W., Nguyen, Q., Zhang, J., Mavrikis, M., & Rienties, B., 2019. Learning analytics for learning design in online distance learning. *Distance Education*, *40*(3), 309-329.

Hong, J. C., Hwang, M. Y., Tai, K. H., & Lin, P. H., 2017. Intrinsic motivation of Chinese learning in predicting online learning self-efficacy and flow experience relevant to students' learning progress. *Computer-assisted language learning*, *30*(6), 552-574.

Kaplan, A. M., & Haenlein, M., 2016. Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster. *Business Horizons*, *59*(4), 441-450.

Kara, M., Erdoğdu, F., Kokoç, M., & Cagiltay, K., 2019. Challenges faced by adult learners in online distance education: A literature review. *Open Praxis*, *11*(1), 5-22.

Kem, D., 2018. Role of information and communication technology in open and distance learning. *The Research Journal of Social Sciences*, *9*(11), 55-59.

Kumar, R., 2019. *Research methodology: A step-by-step guide for beginners*. Sage Publications Limited.

Kurilovas, E., & Vinogradova, I., 2016. Improved fuzzy AHP methodology for evaluating the quality of distance learning courses. *International journal of engineering education*, *32*(4), 1618-1624.

Lee, D., Toufaily, E., & Zalan, T., 2017. Is the Avalanche of E-learning Coming to the UAE?. In *Leadership, Innovation and Entrepreneurship as Driving Forces of the Global Economy* (pp. 335-343). Springer, Cham.

Levine, H., Jørgensen, N., Martino-Andrade, A., Mendiola, J., Weksler-Derri, D., Mindlis, I., ... & Swan, S. H., 2017. Temporal trends in sperm count: a systematic review and meta-regression analysis. *Human reproduction update*, *23*(6), 646-659.

Markova, T., Glazkova, I., & Zaborova, E., 2017. Quality issues of online distance learning. *Procedia-Social and Behavioral Sciences*, *237*, 685-691.

Markova, T., Glazkova, I., & Zaborova, E., 2017. Quality issues of online distance learning. *Procedia-Social and Behavioral Sciences*, *237*, 685-691.

McGreal, R., 2018. Hearables for online learning. *The International Review of Research in Open and Distributed Learning*, *19*(4).

Mohajan, H. K., 2018. Qualitative research methodology in social sciences and related subjects. *Journal of Economic Development, Environment and People*, *7*(1), 23-48.

Mulholland, S., 2016. ADHD-specific knowledge and attitudes of teachers (ASKAT): Development and validation of a new research instrument. *International Journal of Educational Research*, *77*, 109-116.

Nico, M. L., 2016. Bringing life "back into life course research": Using the life grid as a research instrument for qualitative data collection and analysis. *Quality & Quantity*, *50*(5), 2107-2120.

Ørngreen, R., & Levinsen, K., 2017. Workshops as a Research Methodology. *Electronic Journal of E-learning*, *15*(1), 70-81.

Raghu, M., Gilmer, J., Yosinski, J., & Sohl-Dickstein, J., 2017. Svcca: Singular vector canonical correlation analysis for deep learning dynamics and interpretability. In *Advances in Neural Information Processing Systems* (pp. 6076-6085).

Reynolds, P. A., & Irwin, D. W., 2019. *U.S. Patent No. 10,404,556*. Washington, DC: U.S. Patent and Trademark Office.

Sadeghi, M., 2019. A shift from classroom to distance learning: advantages and limitations. *International Journal of Research in English Education*, *4*(1), 80-88.

Sadik, A., 2016. Factors affecting the acceptability of online degrees: evidence from two Arab countries. *International Journal of Emerging Technologies in Learning (iJET)*, *11*(12), 54-63.

Sánchez-Elvira Paniagua, A., & Simpson, O., 2018. Developing student support for open and distance learning: The EMPOWER project. *Journal of Interactive Media in Education*, *2018*(1).

Savage, S., & Piwek, P., 2019. A full report on challenges with learning to program and problem solve an analysis of first-year undergraduate Open University distance learning students' online discussions.

Schroeder, L. D., Sjoquist, D. L., & Stephan, P. E., 2016. *Understanding regression analysis: An introductory guide* (Vol. 57). Sage Publications.

Simpson, O. (2018). *Supporting students in online, open and distance learning*. Routledge.

Simpson, O., 2018. *Supporting students in online, open and distance learning*. Routledge.

Smith, P. J. W., Garden, O. J., Wigmore, S. J., Borgstein, E., & Dewhurst, D., 2018. The effectiveness of an online, distance-learning Masters in Surgical Sciences programme in Malawi. *African Journal of Health Professions Education*, *10*(3), 159-165.

Snyder, H., 2019. Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, *104*, 333-339.

Stupnisky, R. H., Hall, N. C., & Pekrun, R., 2019. Faculty enjoyment, anxiety, and boredom for teaching and research: instrument development and testing predictors of success. *Studies in Higher Education*, *44*(10), 1712-1722.

Syed, M. R., 2020. Methods and applications for advancing distance education technologies: International issues and solutions. *Simulation*, 348.

Taherdoost, H., 2016. Sampling methods in research methodology; how to choose a sampling technique for research. *How to Choose a Sampling Technique for Research (April 10, 2016)*.

Taherdoost, H., 2016. Validity and reliability of the research instrument; how to test the validation of a questionnaire/survey in research. *How to Test the Validation of a Questionnaire/Survey in a Research (August 10, 2016)*.

Watts, L., 2016. Synchronous and asynchronous communication in distance learning: A review of the literature. *Quarterly Review of Distance Education*, *17*(1), 23.

Weidlich, J., & Bastiaens, T. J., 2018. Technology Matters–The impact of transactional distance on satisfaction in Online Distance Learning. *International Review of Research in Open and Distributed Learning*, *19*(3).

Weidlich, J., & Bastiaens, T. J., 2018. Technology Matters–The impact of transactional distance on satisfaction in Online Distance Learning. *International Review of Research in Open and Distributed Learning*, *19*(3).

Weidlich, J., & Bastiaens, T. J., 2018. Technology Matters–The impact of transactional distance on satisfaction in Online Distance Learning. *International Review of Research in Open and Distributed Learning*, *19*(3).

Wiek, A., & Lang, D. J., 2016. Transformational sustainability research methodology. *Sustainability science* (pp. 31-41). Springer, Dordrecht.

Xu, D., & Xu, Y., 2019. The Promises and Limits of Online Higher Education: Understanding How Distance Education Affects Access, Cost, and Quality. *American Enterprise Institute*.

Zaborova, E. N., Glazkova, I. G., & Markova, T. L., 2017. Distance learning: Students' perspective. *Sociological Studies*, *2*(2), 131-139.

Zaborova, E. N., Glazkova, I. G., & Markova, T. L., 2017. Distance learning: Students' perspective. *Sociological Studies*, *2*(2), 131-139.

Zaborova, E. N., Glazkova, I. G., & Markova, T. L., 2017. Distance learning: Students' perspective. *Sociological Studies*, *2*(2), 131-139.

Zacharias, G., & Yiannis, G., 2017. Differences between Regular and Distance Education in a Teacher's Training Program. *European Journal of Open, Distance and E-learning*, *20*(2), 17-29.

Zheng, B., Lin, C. H., & Kwon, J. B., 2020. The impact of learner-, instructor-, and course-level factors on online learning. *Computers & Education*, *150*, 103851.