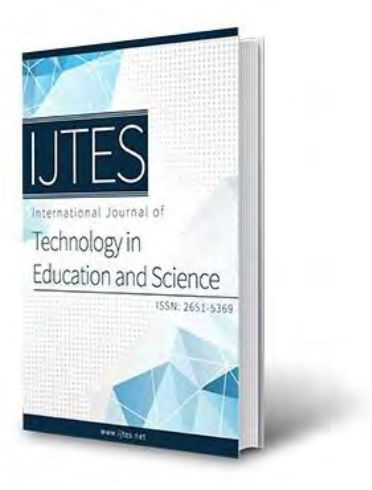

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Raul Nick Cabrera
University of Texas Rio Grande Valley, United States

Velma Dora Menchaca
University of Texas Rio Grande Valley, United States

Marie Simonsson
University of Texas Rio Grande Valley, United States

Hilda Silva
University of Texas Rio Grande Valley, United States

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Abstract

The purpose of this research was to obtain faculty perceptions of online instruction and educational technology in higher education. Data was collected from eight participants through interviews and open-ended questions at a higher education institution. Results showed that faculty consider that online instruction is only possible for certain programs and that it's only for certain student populations. In addition, faculty perceive online learning environments as a repository for class information and serve as a communication medium between instructor and student. Furthermore, faculty believe that there is no substitution for traditional teaching methods regardless of the educational technology available. Theoretical and practical implications of the results are discussed.

Introduction

Information and communication technology have changed the way people communicate, relate, and behave in our current society, and classroom instruction is no exception. Technological advances have influenced the way educational materials are made available as well as the communication between students and faculty (Ehlman et al., 2011). Information and communication technology will only become more dominant in our society and more individuals will expect it to meet their educational demands (Fortino & Wolf, 2007). "Online education is established, growing, and here to stay" (Mayadas et al., 2009, p. 49). Online distance education is becoming increasingly popular and being made available on higher education campuses worldwide. This type of education is also referred to as web-based instruction, distance education, distance learning, e-learning, and online instruction (Kebritchi et al., 2017).

Distance education grew in the United States for the following three reasons: the distance that may exist between students and academic institutions, the demand for education, and the rapid development of technology (Casey, 2008). Furthermore, distance education was implemented to provide educational opportunities to non-traditional students at a distance, however, this trend now has changed, and it is being implemented to enhance educational opportunities (Ortagus, 2017). In addition, the overall cost of higher education in the United States keeps growing at an alarming rate surpassing that of the United States economy (Bowen, 2013). Online learning is seen as a primary method by which these rising costs may be addressed by reducing labor costs through larger classes and no need for an actual physical space (Deming et al., 2015). In addition, online learning requires less physical

space and resources while offering students access to higher education at reduced living costs (Crampton et al., 2012). Furthermore, distance education allows higher education institutions to access a global student market which may encompass non-traditional students (Ortagus, 2017). Thus, online instruction has provided an alternative revenue source for academic institutions of higher education (Ortagus, 2017). In addition, external events, such as the global pandemic of COVID-19 in late 2019 early 2020, caused higher education institutions to rely heavily on online instruction (Vander Schee & Birrittella, 2021).

Online learning has received great attention because instruction is being drifted from traditional brick and mortar face to face instruction to computer-based interaction such as multimedia, illustrations, and simulations. The factor that has affected distance education the most is technology. Furthermore, the composition of the student body has changed dramatically since the introduction of online instruction. In 2010, Colorado and Eberle (2010) reported that most students who engage in online learning are between the ages of 25 to 50, with a median age of 30 to 34. Most online learning students tend to be adults and therefore the more we understand about adult learning, the more we understand the nature of distance learning (Colorado & Eberle, 2010). Furthermore, due to the COVID-19 pandemic of late 2019 early 2020, most universities were forced to switch from traditional classroom instruction to fully online classes (Ma & Luo, 2021). Nearly all education programs were moved to online while suspending all in classroom instruction (MacDonald et al., 2020). The shift to online instruction and their several methods are deemed to be examined (MacDonald et al., 2020).

Due to online instruction, there are three types of universities that are emerging, brick universities, click universities, and brick and click universities (Levine, 2000). Brick universities are the traditional universities that offer traditional classroom instruction. Click universities are those universities whose presence is strictly online and only offer online instruction. While brick and click universities are those that offer traditional classroom instruction in addition to online instruction (Levine, 2000).

The Higher Education Act of 1992 had the following limitation: To participate in federal student aid (FSA) programs authorized under Title IV of the Higher Education Act (HEA), institutions must meet eligibility requirements known collectively as the 50% rules. According to the rules, if telecommunication courses constitute at least half of the total courses offered at the IHE, then telecommunications courses are correspondence course; and if more than 50% of an IHE's courses are correspondence course, or if 50% or more of an IHE's students are enrolled in correspondence courses, the IHE loses its Title IV eligibility. Student's eligibility for FSA also depends on their own DE course taking. (Kuenzi et al., 2005, p. 6).

Therefore, any higher education institution that had more than 50% of their courses offered online, would not be eligible for Title IV student financial aid to prevent fraud and abuse. However, due to the continued growth and demand of higher education, the 1998 Higher Education Act created the Distance Education Demonstration Program (DEDP) which allowed the distribution of waivers to the 50% rule to academic institutions of higher education.

In 1994, there were 750,000 students enrolled in online courses in the United States, by 2001, there were well over 2 million students enrolled in online courses (Ehlman et al., 2011). As of 2016, 31% or 6.5 million students

are enrolled in online courses at higher education institutions across the United States (Lederman, 2018). Due to this ever-growing enrollment rate, higher education administrators continue to make significant and imperative decision regarding online instruction at their perspective academic institutions which often consider their comprehension of faculty opinions (Wickersham & McElhany, 2010). In addition, due to this rapid growth, the United States Department of Education has been seeking to implement guidelines on online instruction (McKenzie, 2018). However, these guidelines only address licensure issues where students are required to partake in a state mandated exam. In addition, these guidelines also address the ramifications of online instruction and requires academic institutions to be able to operate in the state in which students enroll and must make their refunds policies and procedures well known (McKenzie, 2018). These guidelines only address logistical issues and not actual course instruction guidelines.

Academic institutions of higher education are placing demands on faculty to align with the changing demands of educational technology. Unfortunately, these demands do not fit in well with the scholarly values and traditions of academic culture in teaching, research, and service roles. In other words, online instruction has caused faculty to change their methods of traditional teaching, standard curriculum, and typical assessment. Also, online instruction has changed the typical student body and the typical working environment (McShane, 2004). Nixon (2015) argues that these three areas are what make up the professional self-identity of an academic institution of higher education. It is relevant that indeed online instruction is causing changes in the overall administration and function of academic institutions of higher education.

Therefore, it is imperative to study and observe all aspects of this ever-changing phenomenon closely and continuously. In fact, due to this explosive growth and education significance, research interest has risen over the past years to address the perceptions of online instruction in higher education.

Statement of the Problem

According to the research that has been conducted, online instruction differs widely from a traditional classroom environment (Yuan & Nie, 2021). For example, some differences include loss of instructor's views and perspectives, loss of live classroom discussions, loss of lectures, and change of student motivation (Hirschheim, 2005). In addition, there is poor supervision of online classroom instruction of teachers on students (Yuan & Nie, 2021). Even though taking an online course offers convenience and flexibility to the student, the results of Hirschheim's study indicated that seventy-four percent of students surveyed stated that taking an online course was a loss of educational value (Hirschheim, 2005). In addition, online courses have shown to have a higher dropout rate (Adams, 2007). Online courses require a high level of student participation, a high level of student collaboration, effective use of technology and the courses are usually accelerated which require high student commitment (Uglig, 2002).

Since online courses lack face to face contact, interpersonal classroom experiences, and mentoring; research has shown that these missing factors influence an online course (Adams, 2007). The main differences between face-to-face discussions and asynchronous online discussions are access and availability, duration, expression mode,

and visual cues (Blackmon & Major, 2012). While some of these factors may be addressed through technology in an online environment, the truth of the matter is that the class instruction will never be the same as in a traditional course. Faculty in general are extremely hesitant at utilizing information and communication technology in class instruction (Al-Senaidi et al., 2009). Research has shown that this hesitation is not necessarily a technical one, but rather one of sociological, organizational, and psychological variables (Straub et al., 1997). Organizational culture is another major determinant of perceptions towards online instruction in higher education (Zhu & Engels, 2014).

Need for the Study

There is a need to study faculty perceptions of online instruction and educational technology in higher education since online instruction has been set to be an alternative solution to traditional face to face class instruction (Lease & Brown, 2009). In addition, faculty perceptions play a critical role in determining teaching attitudes, learning outcomes, and faculty development (Griffin & Museus, 2011). Furthermore, online instruction has been highly incorporated into higher education to change education and learning methods as well as to provide acceptable educational opportunities to online leaners (Perry & Pilati, 2011). Higher education online learning in the United States represents the fastest increasing instructional mode and is well established among many higher education institutions (Worthen, 2013). To ensure the success and value of higher education in online learning, understanding existing faculty perceptions on the significance of online instruction is critical (Uhlig, 2002). Therefore, faculty perceptions of online instruction and educational technology influence teaching methodologies and affect the implementation of online learning.

Purpose of the Study

The purpose of this study is to attain tenure and tenure track faculty perceptions of online instruction at the University of South Texas regardless of their experience with online instruction. These perceptions will be obtained through individual closed ended surveys and selected interviews. In addition, the researcher will also examine the perceptions of tenure and tenure track faculty towards the online learning environment, Blackboard, and the educational technology utilized at the University of South Texas. Understanding the perceptions of online instruction and educational technology of tenure and tenure track faculty is vital to the continued growth of distance education and the understanding of the academic concerns of higher education institutions.

Research Questions

The following research questions will guide the research:

1. What perceptions exist among tenure and tenure track faculty at the University of South Texas within the Departments of Biology, Physics, Computer Science, and the School of Mathematical and Statistical Sciences regarding the online learning environment and educational technology who support online instruction in higher education?

2. What perceptions exist among tenure and tenure track faculty at the University of South Texas within the Departments of Biology, Physics, Computer Science, and the School of Mathematical and Statistical Sciences regarding the online learning environment and educational technology who do not support online instruction in higher education?

Method

This study utilized the phenomenological approach of qualitative research methodology to explore the lived experiences of faculty members regarding online classroom instruction. Qualitative research "attempts to make sense of, or interpret, phenomena in terms of the meanings people bring to them" (Denzin & Lincoln, 2011). In addition, "qualitative researchers use an emerging qualitative approach to inquiry, the collection of data in a natural setting sensitive to the people and places under study, and data analysis that is both inductive and deductive and establishes patterns or themes" (Creswell, 2007, p. 70). According to Creswell, "a phenomenological study describes the common meaning for several individuals of their lived experiences of a concept or a phenomenon" (Creswell, 2007, p. 76). This approach allowed the researcher to conduct interviews with faculty members who are in favor of online instruction as well as those who are not in favor of online instruction. The interviews captured some of the concerns current faculty have over online course instruction and the technology utilized through their own perceptions.

In qualitative research, the researcher conducts both, the data collection and analysis of the data collected, therefore causing for potential researcher bias (Miles & Huberman, 1994). Therefore, there are several methods of triangulation utilized to validate the data collected. Qualitative validity, refers to "researcher checks for the accuracy of the findings by using several procedures." (Creswell, 2007, p. 201). Triangulation is the defined as the use of multiple procedures to enhance the comprehension of a certain phenomenon (Torrance, 2012). Triangulation guarantees that there is authenticity in the data that was obtained. The researcher used member checking and data triangulation to achieve validity in the data obtained. Member checking allows the participants in the study to review the transcripts of the individual interviews so that feedback may be obtained from the collected data itself (Creswell, 2007). Triangulation of the data was achieved through individual participant interviews and through observation of the participant interviews. In other words, "Prolonged engagement and persistent observation in the field include building trust with participants, learning the culture, and checking for misinformation" (Creswell, 2007, p. 250).

Site and Participant Selection

The University of South Texas was created by the Texas Legislature in 2013 and it was the first major public university in Texas of the 21st century and is in deep South Texas, close to the border with Mexico. The University of South Texas has onsite and offsite teaching sites throughout the Rio Grande Valley of South Texas, from Brownsville, Texas to Rio Grande City, Texas. In 2020, the University of South Texas had a student enrollment of 32,441 students, making the university the 9th largest public university in the State of Texas. The University is considered a HSI institution, with a Hispanic population of 90.5% and encompasses 11 colleges and schools. The

total number of faculty members at the University of South Texas in fiscal year 2020 include 1,789 and a total staff of 2,794. The University of South Texas has an annual budget of $633,145,784 with annual research expenditures of $53,663,365 for fiscal year 2020. Faculty of the University of South Texas were the participants selected for this study. The Departments that were selected are those Departments that have courses that are offered both online and in person. The COVID-19 pandemic of late 2019 early 2020 has allowed selection of any department as all courses had to be taught online. The Departments selected are departments that offer core curriculum courses as designated by a student's degree plan.In order to obtain a strong sample of faculty data, faculty from various departments that offer traditional and online courses were selected. A listing of every faculty member was obtained from every selected Department and were contacted via email. Three key questions were asked to obtain data that will reflect the researchers' objectives.

Research Questions

1. Have you taught both online and in-person classes? (Yes or No)
2. Are you in favor of online instruction? (Yes or No)
3. Would you like to participate in a research study regarding online instruction in higher education through an interview via zoom with the researcher? (Yes or No)

The responses of the initial email were sorted to obtain faculty members who are willing to participate in the interview and who have taught both online and in-person classes. Then, those results were sorted into those who are in favor and those who are not in favor of online instruction. Then, once again, the surveys were sorted to represent two faculty members from every department. Then at random, one faculty member from each list was selected for the study. With the assistance of the Department Chairs, those selected members were scheduled for a virtual interview.

Instrumentation

The qualitative research that was conducted was in the form of interviews which were addressed to selected faculty in the Departments. Open ended questions were included that helped identify any themes that may exist with online instruction (Bolliger & Wasilik, 2009). The following questions were asked to the selected faculty participants.

Interview Questions

1. There are so many online higher education institutions offering all levels of academic degrees completely online. What is your honest opinion regarding these institutions regarding their validity and value of the degree earned by the online student?
2. Would you recommend an online degree? Why or why not?
3. Would you recommend an online course? Why or why not?
4. Universities today are placing heavy emphasis on faculty to teach online. Do you agree on that directive?

Why or why not?

5. What is your honest opinion regarding the online learning environment utilized on this campus, Blackboard? What aspects would you change? Have you used a different online learning system?

6. Do you feel the online learning environment is suitable in the teaching of a course? Why or why not?

7. There are currently three online teaching modalities, hybrid, asynchronous, and synchronous. Which modality have you taught? Do you have a preference?

8. Describe how you feel about being able to get your instruction across to students via an online modality.

Results

Even though the faculty members were arranged into two different groups, four that supported online instruction and four that didn't support online instruction, the findings showed that there was no difference between the analyzed data and the responses received between the participants. The concluded themes were synonymous across all participants. The only difference between those that supported and those that didn't support online instruction, was that those faculty members that support online instruction, only support it as a basis that is provides students the flexibility to attend class virtually. The analysis and coding from the participant data, resulted in four major themes. Those themes include, the area of academic concentration, the student level of academic discipline, the online learning system, and online learning as an alternative.

Theme One: The Area of Academic Concentration

Faculty participants indicated that perhaps online instruction would be possible in certain academic disciplines but not all in general. The research participants were all involved in the areas of science, technology, engineering, and mathematics (STEM), and therefore there was some hesitation to the possibility of teaching such disciplines online. Faculty interviewed indicated that not all programs are suitable for online instruction and that it would depend on the course content and the level of the course itself.

According to the faculty interviewed, not all programs are able to be taught through an online learning environment. Participant one responded, "Does not apply for all programs at different levels, some courses can be taught online, while others cannot. Depends on the discipline." Participant two answered, "Some of these programs are not suitable for everyone, depends on the program." Participant three added, "Some careers may be possible, but not in STEM." It is evident that the faculty members had a majority consensus that not all programs are possible online due to certain factors such as lack of student engagement. The literature further supports that perception in that it indicated that online instruction had a loss of instructor's views and perspectives, had a loss of live classroom discussion, and a loss of lectures (Hirschheim, 2005). Participant four also added, "It is important to have face to face classes because it's not just to teach students the content." Participant five stated, "Depends on the field where the area that the degree is being received in; I also think that there are probably many fields that are not suited or not really appropriate for an online degree. In my opinion, I don't think it's really a good idea." Participant six also stated, "May be lacking in the educational experience that students need and get in a face-to-face environment. May lack its own and some validity, in terms of value, well…" Participant seven

had some more interesting responses to the question, “Online is garbage; it is missing out on the while point of university. I don’t have much confidence in those degrees; some degree would better than others in an online environment.” Even though participant seven opposed online instruction, the participant did state that depending on the degree, it may be possible online. Participant one responded, “Not in STEM, perhaps in other fields.” Participant five replied with, “I think it depends on the field; in STEM no, it depends on the degree itself.” Participant six added, “If the program was discussion based, then yes, otherwise no.” Thus, participant’s six response reflects that some degrees may be possible online. Participant eight answered, “Depends on the area of study; not all programs are possible online.”

The participant perceptions reflected what the literature reveals which is that online courses require a high level of student participation and collaboration. Effective use of technology and the courses are usually accelerated which require a high level of student commitment (Hirschheim, 2005). In addition, the faculty responses supported the literature in that online instruction differs widely from a traditional classroom environment (Yuan & Nie, 2021).

Furthermore, participant one answered, “Discussions can be done online, so yes, some courses can be delivered online.” Participant two added, “Depends on the type of course; I feel it’s harder to get students to buy in to participate and be actively engaged on zoom than it is in person. Some people just lecture and it’s like watching a YouTube video, in which case I don’t think it really matters whether the course is online or in person.” Participant three also stated, “Some courses are possible, especially those where the professor reviews everything through lectures; but some classes are not possible.” The literature states that online learning environments are composed of three interactions, which include, interaction between students, interaction between students and content, and interaction between students and instructor (Cho & Kim, 2013). The faculty perceptions reflect that there is obviously a lack of all three interactions or not all three are being addressed.

Theme Two: Student Level of Academic Discipline

The participants in the study revealed that successful online learning was dependent on student level of academic discipline. Participant one responded, “Depends on the discipline and the student itself.” Participant two answered, “Some of these programs are not suitable for everyone; depends on the student and on the program.” The participant perceptions reflected what the literature reveals which is that online courses require a high level of student participation and collaboration. Effective use of technology and the courses are usually accelerated which require a high level of student commitment (Hirschheim, 2005).

Also, the participants indicated that they would only recommend online courses to students who were mature independent students, and not incoming freshman. Participant three responded, “It requires a lot of maturity and determination for classes online. I think is possible, but I would not recommend it. May be difficult for younger students.” Participant four also responded with, “I don’t recommend studies online and I think they have to evaluate how the person is.” Participant seven indicated, “Depends on the student’s motivation on whether or not they feel motivated to engage in class and I think that can affect the quality of online instruction." These

perceptions are enforced by the literature as it states that in an online learning environment, student success is dependent on student dedication and participation (Topper, 2007). Therefore, students enrolled in an online classroom must be extremely committed. In addition, one of the four principles of the constructivist theory states that learning requires interaction and effort with a phenomenon and requires learners to become active creators and not just receivers of knowledge (Marcum-Dietrich, 2008). Classroom lessons require students to develop their own thought and analysis, are time consuming, and very complicated but are the most effective (Bevevino et al., 1999). Per the responses from the participants, it is evident that student maturity and responsibility are major factors that influence online instruction.

Theme Three: The Online Learning System

Faculty perceptions indicated that this online learning system, Blackboard, is only adequate for posting lectures, notes online, discussion threads, and grades. Participant two indicated, "I only use Blackboard for posting notes, recordings of the class, and grades." Participant three added, "Blackboard is ok; not the best for online instruction. Blackboard needs to be more organized and that would help students perform better online." Participant 4 stated, "Blackboard needs a lot of work; instructional videos of its features for faculty are way too long." Participant five indicated, "Blackboard requires extensive time to learn, and it is just, 'ok'. It is adequate to post videos, files, and grades." Participant 6 added, "Blackboard is used for posting files, syllabus, and announcements." Participant 8 stated, "Blackboard is mainly just a communication spot, post notes, announcements, and lectures." The literature did indicate that one of the aspects of online learning systems is to deliver course material, such as video, audio, animations, handouts, PowerPoint slides, and/or lecture (Limniou & Smith, 2010). However, faculty perceptions indicate that this online learning system is adequate for only delivering content. Per faculty opinions, it is missing the other two aspects, which are to provide interaction for student communication and the ability to track and analyze student data (Allen & Seaman, 2013).

All the participants indicated that they have all used other online learning environments which were much better than Blackboard. Participant one indicated, "Yes, I have used a different online learning environment, and it was much better and more organized than Blackboard." Participant two stated, "Yes, I have used a different online learning environment, and it is much better than Blackboard. It was more organized and easier to setup." Participant three added, "Yes, I have used a different online learning environment, and it was much more organized than Blackboard. Blackboard is ok, not the best for online instruction." Participant four responded, "Yes, I have used a different online learning environment, and it was much better than Blackboard, but still not the same as face-to-face instruction." Participant five stated, "I have used much better online learning environments, Blackboard is just ok." Participant eight added, "Yes, I have used other online learning environments, Blackboard is a little bit clunky and not real smooth." The literature indicated that online learning systems should be simple but yet, solid in the content available, thus be extremely organized (Armstrong, 2011). Faculty perceptions indicate otherwise, at least in this online learning system.

Faculty felt that there were too many limitations set forth in an online learning environment. Participant one stated, "No, I don't think so, I think we are far from having such a system. There are too many limitations even

with three screens in front of me." Participant three specified, "There are too many limitations, you can't see all students at once, and there is not enough interaction." Participant four indicated, "You cannot get across what you want through Blackboard." As the literature indicated and supported by faculty perceptions, differences between traditional classrooms and online instruction include the loss of instructor's views and perspectives, loss of live classroom discussions, loss of lectures, and change of student motivation (Hirschheim, 2005).

Participant six stated, "The training we received was adequate, but not enough to learn enough to deliver courses online." Participant seven indicated, "No, online environments may be suitable for discussion forums, and they don't allow for real live communication." As the literature indicated, unlike verbal communication, written discussion in an online course does not express the tone of a conversation (Qiyun & Woo, 2007).

In addition, the participants indicated that the online learning system was mainly used for communication purposes and data sharing. Participant four indicated, "The online environment is mainly used just to post notes and lectures, and that's it." Participant one added, "You cannot get across what you want through Blackboard, only used for PowerPoint presentations and communication with the students." Participant five stated, "Online environment may be suitable for discussion forums only."

The participants felt that interaction with students was a missing factor in online instruction. In addition, many participants felt that student engagement was an extremely important part of the learning process and was a major factor missing in online instruction. Participant one stated, "No, there is a critical part missing, the live interaction with students. Student engagement is extremely important in education and an online environment doesn't provide that." Participant three added, "You don't get to see faces, and therefore you don't know if the material was clear." Participant four stated, "Learning requires interaction, human being interaction." In addition, participant eight states, "Human connection is the most important factor in teaching." The literature indicated that since online courses lack face to face contact, interpersonal classroom experiences, and mentoring; research has shown that these missing factors influence an online course (Adams, 2007). In addition, it is evident that while technology may address some of those factors, the truth of the matter is that the class instruction will never be the same as in a traditional course.

Furthermore, participants felt that online courses were difficult to implement and that most faculty felt that not enough training was provided by the institution. Participant five stated, "If the class was developed appropriately, that is not just posting lectures and notes online. Not enough training given to us to develop effective online courses." Participant seven added, "The university provided training to the best of their ability; however, it was just not enough." Participant six answered, "To be able to deliver the content effectively, we would really need an immense amount of training, not what we have today." Participant three stated, "You complete the training provided, but you end up with no sense of direction." The literature indicates that course designers should have the ability to recommend and provide adequate feedback to the faculty whenever they are uploading and designing their online course (Al-Senaidi et al., 2009). Furthermore, the literature indicated that an online learning environment should require the lower level of technical expertise on the students and the faculty (Osman, 2005).

Theme Four: Online Instruction as an Alternative

Faculty members indicated that they would recommend an online degree if and only if the need was accessibility. Participant two added, "Yes, if and only if there was a need for accessibility. However, I would recommend an in-person program so that they can have a sense of community." Participant seven, indicated that, "In certain circumstances, nontraditional students, because of work and time, it would be ok to take online courses." Participant three answered, "If the main issue was accessibility, then yes, otherwise no, face-to-face is the way to go." Participant five responded, "In certain circumstances where online was the only option."

Furthermore, the faculty respondents indicated that if an online course was well done, then yes, they would recommend an online course and if the online course was the only option for the student. Participant four replied, "Courses must be developed and designed well; this depends on the institution." Participant seven indicated, "To recommend an online course, it would have to be very well done, and it would have to be an elective, not a core course." The literature reveals that an online learning system must have unlimited access and the support from the academic institution must be well implemented (Allen & Seaman, 2013).

In addition, faculty interviewed indicated that if there was a choice between face to face and online, face to face instruction would be recommended. Participant six simply answered, "If a student had a choice between an online degree and a traditional one, I would definitely say traditional." Participant 8 answered, "Students should be allowed to choose between online and traditional, and the correct choice should be traditional." Participant two added, "I would recommend an in-person program so they can have a sense of community." Participant eight stated, "Online setting is not really conducive for student to pick up the skills."

In terms of the high number of online courses being offered by academic institutions, the participants indicated higher education was being seen as a business, as in for-profit. Participant one responded, "Even education can be seen as a business; they look at the numbers." Participant three added, "Universities need to make a profit like an organization, and this is a way to make money." Participant eight stated, "Universities are going to risk losing their identity for profit." Participant four indicated, "This directive is motivated for economic reasons, and I don't fully support that." Thus, as the literature indicated, online instruction has provided an alternative revenue source for academic institutions of higher education (Ortagus, 2017). Also, the literature has reflected that the problem of the value of an online education has been attributed to the high number of for-profit institutions that now offer full degree programs online (Smith & Mitry, 2008).

In terms of the high number of seats available in online courses, the participants indicated that larger classes decrease the quality of education. Participant two indicated, "Students tend to get lost and fall through the cracks and instructors don't notice. If you don't care about student engagement, larger classes are possible. Larger class sizes decrease quality of education." Participant eight stated, "Larger sizes don't get student voices heard; it creates an inequality." Participant one answered, "I do not fully support this directive as offering larger classes creates opportunities for students to register but at a lower quality of education." Participant five added, "Depends on the amount of time being placed on developing online courses and on the individual faculty member

preferences." Participant six stated, "High number of students in an online course simply waters down the effectiveness of the course and the content; not an ideal solution." The literature indicated that online learning requires less physical space and resources, thus creating an unlimited number of student seats (Crampton et al., 2012). In addition, as the literature reflects, distance education allows higher education institutions to access a global student market which may encompass non-traditional students, thus giving access to different population of students (Ortagus, 2017). It is obvious that large classrooms are not ideal per faculty perceptions.

Discussion

This study focused on perceptions of online instruction and educational technology in higher education. Participants were derived from four specific Departments at the University of South Texas: Physics, Biology, Computer Science, and the School of Mathematical and Statistical Sciences. Two faculty members were selected from each Department, one who supported online instruction and one who did not support online instruction. This phenomenological research included a total of eight participants. Interviews were held with all participants, through zoom and in-person sessions. It is recommended that phenomenological research studies have 3 to 10 participants and one phenomenon (Creswell, 2007). The questions used in the faculty interviews are as follows.

1. There are so many online higher education institutions offering all levels of academic degrees completely online. What is your honest opinion regarding these institutions regarding their validity and value of the degree earned by the online student?
2. Would you recommend an online degree? Why or why not?
3. Would you recommend an online course? Why or why not?
4. Universities today are placing heavy emphasis on faculty to teach online. Do you agree on that directive? Why or why not?
5. What is your honest opinion regarding the online learning environment utilized on this campus, Blackboard? What aspects would you change? Have you used a different online learning system?
6. Do you feel the online learning environment is suitable in the teaching of a course? Why or why not?
7. There are currently three online teaching modalities, hybrid, asynchronous, and synchronous. Which modality have you taught? Do you have a preference?
8. Describe how you feel about being able to get your instruction across to students via an online modality.

The results of this study yield informative and illuminating insight into the perceptions of faculty towards online instruction in higher education. As this research and the literature have shown, online instruction differs widely from a traditional classroom environment (Yuan & Nie, 2021). Every faculty interview question resulted in themes associated with the context of the research question. The themes derived indicated that online instruction may not be possible in the areas of science, technology, engineering, and mathematics (STEM). In addition, faculty perceptions indicated that not all disciplines may be taught through online environments. Not only did most of the faculty concur with those perceptions, but it was also determined that the viability of online instruction also depended on the students themselves. The literature further supported that by indicating that the theorical framework used in this research, constructivism, requires students to be actively involved in creating their own

knowledge through a phenomenon and its interactions (Marcum-Ditrich, 2008). Therefore, students must be heavily involved in the process of learning through online methods.

Faculty were asked if they would recommend an online degree. The responses were synonymous with the responses of the previous question. According to the results, the participants felt that not all programs would be recommended to be instructed online. In addition, the participants also agreed that they would recommend an online degree if and only if there was no other choice available. Furthermore, the participants also stated that they would recommend an online degree if that would make a difference between attending higher education or not. The literature indicates that students have reported that online courses fit better with personal schedules and online attendance save time, thus being an attractive choice for students (Young & Norgard, 2006).

According to the faculty, not all course content may be suitable for online instruction. Furthermore, participants stated that they would recommend an online course if there was no student engagement required and if the course content online was well done. As the literature stated, effective online pedagogy must include high student participation and collaboration (Meyers, 2008). The data also enforced the fact that the participants also agreed that they would only recommend an online course if that was the only option available to the students.

The participants were asked to express their opinion regarding the directive from higher education institutions to teach more and more classes online. The responses were overwhelmingly the same. All participants opposed such a directive. In fact, their responses indicated that higher education was being seen as a for-profit business. The literature did indicate that this perception was due to high number of for-profit academic institutions that exist and offer many of their courses online (Smith & Mitry, 2008). In addition, the participants indicated that large class sizes decrease the quality of an online course and that students are not mature enough or prepared for the responsibilities of an online course. Furthermore, the faculty indicated that in online courses, the human factor is lost. As the literature implied, Hirschheim's study indicated that seventy-four percent of students surveyed stated that taking an online course was a loss of educational value (Hirschheim, 2005). Therefore, the perceptions of the faculty interviewed were that perhaps there is a quality factor in online courses.

The participants were asked to express their opinion regarding the online learning system used at their primary campus, Blackboard. Overwhelmingly, the response was that Blackboard was mainly used as a communication and posting site. The faculty participants indicated that Blackboard was mainly used for posting grades, posting lectures, sharing PowerPoints, and for discussion forums. In addition, the participants all indicated that they have all used other online learning systems and that when compared, all the rest were better and much better organized than Blackboard. The literature implied that one of the main objectives of an online learning system was the ability to share information and communication via discussion boards (Steinbronn & Merideth, 2008). However, in this case and for Blackboard, it seems that Blackboard is only used for that particular purpose.

The participants were asked if an online learning system was suitable to teach a course. All participants indicated no, and that was no possible. According to their responses, there are way too many limitations set forth in an online environment. Once again, they indicated that the online learning platform was only used for posting

information. In addition, the participants indicated that perhaps with better support and training, that may be possible. The literature did reveal that online instruction was different and because of that, training and support was extremely necessary to be successful (Murdock & Williams, 2011).

The participants were asked to express their opinions about being able to get across their teaching methods through an online modality. All participants indicated that no, once again, that was not possible. According to their responses, the interaction between teacher and student would be missing alongside student engagement. Faculty participants also expressed that it is difficult to implement online courses and that it may be due to not enough training. Furthermore, the participants revealed that online courses would not be appropriate for underclassmen, such as freshman and sophomores. That student population simply does not have the maturity and responsibility to manage online courses.

Participant experience and preference of online teaching modalities was explored. The results were as follows: 43% of the participants have taught all three modalities, while 28% have taught two and 28% have taught at least one. The two modalities taught by 28% of the participants were hybrid and synchronous. The single modalities taught by the other 28% was hybrid.

In terms of preference, the participants responded as follows. Participant one stated, “Synchronous, since you have to meet with students at the same time. Some student interaction occurs with synchronous online teaching.” Participant three added, “Prefer traditional, followed by synchronous.” Participant six stated, “Synchronous, would be my preference for online courses.” Participant one stated, “Hybrid and then synchronous; will not do asynchronous. I do the active learning; online students don’t have the same opportunities as in person students, therefore hybrid.” Participant four indicated, “Prefer face to face, followed by hybrid.” In addition, participant six indicated, “Face to face interaction, followed by hybrid.” Also, participant eight stated, “Prefer hybrid due to the human interaction that is supposed to happen."

None of the participants selected asynchronous as a preference. In fact, participant two indicated, “In asynchronous learning, students don’t ever log in; they complete all the assignments in a few weeks, which defeats the purpose of learning.” Participant three indicated, “Asynchronous works better for junior and senior courses.” Participant seven indicated, “For graduate students, asynchronous, they have the academic maturity to do so. Undergraduate students are not ready for that much freedom and responsibility.”

Conclusion

Online instruction represents the fastest growing trend in higher education (Paulsen & McCormick, 2020). In addition, many organizations in business and industry work a fully online or hybrid schedule. Therefore, those students who have taken online courses may have developed learning, communication, and collaboration skills that will be extremely useful in fully remote employment positions (Barbetta, 2022). Therefore, it is extremely vital to understand the experiences of the phenomenon of online instruction directly from faculty members to better understand, implement, and address any foreseeable implications, concerns, and questionable behaviors.

Based on the findings of the research, it is highly recommended that educational leaders in higher education determine what, if any, educational disciplines are appropriate for online instruction. Or at the very least, they must be aware that faculty members believe that certain areas of instruction may be more appropriate for online delivery. This study focused in the areas of science, technology, engineering, and math (STEM), where it is evident, from the research results, that perhaps these areas may not be appropriate for online studies without heavy interaction to the current modalities available. Perhaps, other disciplines, such as business, literature, education, arts, and humanities may be more appropriate for online instruction.

In addition, based on the outcomes of the investigation, the online learning management system is extremely critical in the delivery of online learning. Not only does it make a difference in how faculty perceive online instruction, but it also determines how well an online learning system is used in delivering content, achieve effective communication, and be able to obtain adequate feedback from students. Educational leaders should allow faculty members, being the primary users of online learning systems, the ability to choose which online learning system they would like to use. The results of the research study indicated that most faculty members have used other online learning systems and that most are not content or satisfied with the current online learning systems. Also, many faculty members expressed their concern over the amount of training that was provided by their academic institution. As the literature showed, training is a major part of online instruction and should have priority in academic institutions that wish to offer and implement online courses. Furthermore, based on the results of the study, it is evident that the participants agreed that not only is online learning perhaps attainable with certain academic disciplines, but it is also dependent on the students themselves.

Recommendations

Online instruction continues to grow as academic institutions decide to enhance educational opportunities (Ortagus, 2017). Information and communication technology will only become more dominant in our society and more individuals will expect it to meet their educational demands (Fortino & Wolf, 2007). Also, Mayadas et al. (2009) argue that "online education is established, growing, and here to stay" (Mayadas et al., 2009, p. 49). Online distance education is becoming increasingly popular and being made available on higher education campuses worldwide (Kebritchi et al., 2017).

In addition, online learning requires less physical space and resources while offering students access to higher education at reduced living costs (Crampton et al., 2012). Furthermore, distance education allows higher education institutions to access a global student market which may encompass non-traditional students (Ortagus, 2017). Thus, online instruction has provided an alternative revenue source for academic institutions of higher education (Ortagus, 2017). The shift to online instruction and their several methods are deemed to be examined (MacDonald et al., 2020). Higher education administrators continue to make significant and imperative decisions regarding online instruction at their perspective academic institutions which often consider their comprehension of faculty opinions (Wickersham & McElhany, 2010).

This study focused on the disciplines of science, technology, engineering, and mathematics (STEM); however,

further research should be conducted on other subjects, such as those in the humanities and social sciences. As the results of the research showed, many of the participants stated that perhaps online instruction would be possible outside the areas of STEM. It would be imperative to determine what faculty perceptions exist within those alternative fields. Furthermore, this research study was conducted at an educational institution that offers online and traditional classes in many disciplines. It would be advantageous to study the perceptions of faculty members who teach at a 100% online educational institution. Not having the option of face-to-face classroom instruction may influence the faculty perceptions of online instruction.

In addition, this study didn't consider faculty experience. Therefore, it would be important to research if experience, in either online classes or traditional classroom, would make a difference in the perceptions of online instruction. It is often thought that since courses are taught online, they require faculty with much less experience and with less educational classroom practice (Smith & Mitry, 2008).

On the contrary, online courses require an investment from the faculty, to design an online course with high expectations and with a high degree of student participation (Smith & Mitry, 2008). Further, research should be conducted into how student classification affects the perceptions of faculty towards online instruction. In other words, as the research indicated, faculty perceive upper-level classmen, such as juniors, seniors, and graduate students, to perform better in online courses and thus perhaps increases a positive reflection of online courses.

Faculty and students are no longer limited by the walls of an academic institution. Online instruction continues to grow, and change based on teaching and learning pedagogies alongside the ever-changing educational technology. Enhancing the online experience will only occur if the phenomenon is studied and understood at personal and direct levels. Higher education must take the lead in closing the gaps between face-to-face instruction and online learning. In the words of Albert Einstein, "Education is what remains after one has forgotten what one has learned in school."

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Author Information

Raul Nick Cabrera
https://orcid.org/0009-0003-4117-7005
University of Texas Rio Grande Valley
1201 W. University Drive, Edinburg, Texas 78539
United States
Contact e-mail: *raul.n.cabrera01@utrgv.edu*

Velma Dora Menchaca
https://orcid.org/0000-0002-6377-982X
University of Texas Rio Grande Valley
1201 W. University Drive, Edinburg, Texas 78539
United States

Marie Simonsson
https://orcid.org/0009-0002-8757-7613
University of Texas Rio Grande Valley
1201 W. University Drive, Edinburg, Texas 78539
United States

Hilda Silva
https://orcid.org/0009-0008-9320-5174
University of Texas Rio Grande Valley
1201 W. University Drive, Edinburg, Texas 78539
United States