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Student and Instructor Perceptions of Online Teaching Related to COVID-19: The Need for Reflective Practices

Mary Bowne
South Dakota State University

Melissa Wuellner
University of Nebraska-Kearney

Jessie H. Hendricks
South Dakota State University

John Howard
South Dakota State University

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Mary Browne, Ed.D., South Dakota State University
Melissa Wuellner, Ph.D., University of Nebraska-Kerney
Jessie H. Hendricks, South Dakota State University
John Howard, South Dakota State University

Abstract

Although online learning has been in existence for over 20 years, not all instructors have been trained to teach online or had the desire to teach online. The recent COVID-19 pandemic quickly changed typical face-to-face instruction and disrupted the current educational system by requiring all college courses be delivered online, either asynchronous or synchronous using various software platforms. This paper investigated both instructors' and students' perceptions of faculty online teaching preparedness as well as their thoughts related to various technological resources and issues that arose during this time period. Results indicated fairly high satisfaction rates of faculty's thoughts on preparedness and access to technological resources and tools. Students were fairly satisfied with the transition to online teaching and learning using quantitative measures; however, qualitative comments indicated otherwise. The need to use more reflective and metacognitive strategies to better online pedagogy as well as communicate more with students through a virtual environment was discovered.

Keywords: reflective practices, COVID-19, online teaching and learning, student and faculty perceptions

Introduction

In late 2019 the Wuhan Municipal Health Commission reported a cluster of cases of pneumonia in Wuhan, Hubei Province, China. This was the first detection of what is known today as the COVID-19 virus. In January of 2020, the World Health Organization (WHO) established an Incident Management Support Team to investigate and report on the outbreak. The first report was a comprehensive package of technical guidance online with advice to all countries on how to detect the virus. By mid-January, the first case outside of China was

recorded in Thailand. Within a week of this recorded case, WHO issued a statement saying that there was evidence of human-to-human transmission. By the end of January, there were 7818 confirmed cases in 19 countries. In mid-March, WHO made the assessment that COVID-19 can be characterized as a pandemic.

As the number of cases began to spread across the globe, public and private organizations in the U.S. began taking steps to safeguard their people based on guidance from the medical field and government. One thing was unanimously agreed on: the COVID-19 virus was highly contagious, and close, human contact was discouraged. The workforce needed solutions for ways to continue to work, just not in the ways they had been working before. Many started to work from home, which solved the problem in certain sectors. But there were some organizations that needed to re-think how business was conducted. Education was at the top of the list. According to www.edweek.org, beginning in February, school districts across the nation, including universities, began closing due to the virus. From March 9 through March 24th, 50.8 million schoolchildren were affected. Universities also closed in a similar fashion. The first university closed on March 7th, with other universities and colleges quickly following. By March 26, 2020, at least 14 million students had been affected by the pandemic, with the majority going to online learning (Hess, 2020). Students were now at home, and educators needed a way to connect with them and continue with their education. The solution: virtual learning through asynchronous or synchronous online platforms. Because of this sudden and required change, this study examined college students' and instructors' perceptions of their online experience during the COVID-19 pandemic, which provided results indicating the need for more online pedagogy trainings and reflective and metacognitive strategies throughout online courses within higher education courses today.

Review of Literature

Faculty in post-secondary institutes are often given teaching as a component of their workloads. They typically understand their responsibility is to instruct students in a variety of academic, career, and/or technical subjects yet are sometimes unsure how to teach other than reflecting back on their past experiences as students themselves. According to the American Association of Colleges for Teacher Education (AACTE), the effectiveness and the quality of the teacher is the single most important factor in student learning as well as achievement (2010). Thus, not only knowing what to teach but taking it one step further to knowing how to teach, specifically for each student, is integral for individual students' learning and success in their future careers. So, how should faculty teach, providing quality experiences and assuring students are learning the content, as well as providing experiences, so students enjoy the class? There are numerous research studies that have concluded various aspects to quality teaching.

According to Akerlind (2007), faculty should move from a teacher-centered approach to a more learner-centered approach. In order to do this though, an integral part of the teaching cycle needs to take place - using reflective practices that foster the facilitation of students' learning, the ultimate goal of teaching. Unfortunately, according to LaPrade, Gilpatrick, & Perkins (2014), there is very limited data about self-reflection for online instructors in higher education. This is of deep concern as online teaching was the primary teaching methodology being used during the COVID-19 pandemic.

In 1933, John Dewey encouraged teachers to make informed decisions based on systematic and intentional reflections that make them more aware of their own professional developmental needs. Reflective practices within teaching often refer to four major components: teach, self-assess, consider, and practice. As Finlay stated, reflective practice is learning through and from experiences in order to gain new insights into oneself and one's practice (2008). According to Mathew, Mathew, & Peechattu, "Reflective teaching is a process where teachers think over their teaching practices, analyze how something was taught, and how the practice might be improved or changed for better learning outcomes" (2017, p.127).

Kolb's Learning Cycle showcases four stages to reflective practices. Those stages include a concrete, active experience to test out new ideas and teaching methods; observation to reflect on the experiences; formation of abstract concepts where faculty members draw on ideas, support from colleagues, and their prior knowledge; and active experimentation where faculty members take what they have learned and put it into practice again (1984). These stages also incorporate Brookfield's four lenses to critical reflection, which include students' eyes, colleagues' perceptions, personal experiences of self and others, and relationships of theory into practice (2017).

Reflective practices can consist of various face-to-face and/or online strategies such as learning journals, lesson evaluations, observations, student dialogue, shared planning, polling, recording lessons, peer observation, action research, and most importantly, student feedback (Gilbert, 2016; Mathew, Mathew, & Peechattu, 2017). Inner self-reflection can also take place as instructors mentally analyze their practices. Asking open-ended questions such as "Why?" and "How?" within these reflective practices will provide more detailed information and feedback than closed-ended questions that simply allow students to answer yes or no. This holds true for faculty self-analyzing their own teaching as well, using metacognitive strategies that are often described as strategies that make faculty think about one's thinking. The process of metacognition requires faculty to assess, monitor, and reflect on their performance and learning, which provides more detailed, individualistic feedback to improve or sustain one's teaching strategies and ideas.

Many benefits arise from reflective practices within teaching, both face-to-face and online. These practices help make informed decisions and actions and develop rationales for practices, enlivens classroom experiences, keeps everyone engaged, and models a democratic process which involves both the faculty member and students (Brookfield, 2017). Specifically, when students are engaged and are provided opportunities to offer their ideas, this helps justify faculty members' decisions and challenge their perspectives and understandings of decisions made. Reflective practices also encourage innovation, allowing faculty members to create and experiment with new teaching strategies as well as create more confident teachers who better understand how specific students learn best and the best manners in which to teach them. It provides opportunities to create a learner-centered environment where relationships become positive and respectful, and students become active participants in their learning (Cambridge International Education Teaching and Learning Team, n.d.). Reflective practice in teaching also is an important source of personal, professional development, improvement, and a manner to bring together theory into practice (Mathew, Mathew, & Peechattu, 2017). Reflective practices offer detailed information, a process to better facilitate teaching, learning, and understanding. Although many faculty often use reflective strategies to better their teaching, not all do, leaving students in despair when technology is unavailable. Technology tools are difficult to use, directions are unclear, and/or communication is absent. This seemed to be more apparent during the COVID-19 pandemic when many faculty were forced to teach online, and reflective practices were not used frequently. Thus, many faculty may have perceived the simple act of completing the semester online as a generally positive and rewarding experience without reflecting on whether students were gaining what they needed from the course and, thus, counteracting most students' perceptions of the learning experience.

Methods

This study, approved by participating institutional IRB committees, combined the results from two online surveys, both conducted in late spring/early summer 2020. The first survey was developed by the co-authors to assess faculty perceptions toward university and college preparedness for the emergency shift to remote learning. This survey was 15 questions long and included questions related to prior online teaching experience and other demographics (Table 1). Additional questions asked about previous experience with online instruction or learning to determine if prior experience influenced participants' views on preparedness for the emergency shift to remote learning. The survey was developed using QuestionPro software and advertised widely via email and social media by each of the co-authors. Response rates were low for all groups except for university/college instructors.

Goodman-Kruskal Gamma statistics (Agresti, 2013) were computed to compare faculty's previous levels of experience with online courses (both as an instructor and a student) and faculty perception of the overall preparedness of their institution and their ability to re-create all classes for remote learning. Significance was determined at $\alpha = 0.05$. All analyses were performed in R (R Core Team, 2020).

The second survey was conducted between April and June 2020. This 10-question survey was created by instructional design personnel at a Midwestern university to identify students' attitudes toward the emergency shift to remote learning that occurred in spring 2020 (Table 2). These survey questions were also developed using QuestionPro software, and students were invited to participate in the survey via university email.

Table 1: *Faculty survey questions*

List of questions developed by co-authors of this study to assess faculty attitudes toward university and college preparedness for the emergency shift to online instruction in spring 2020 (n = 130 participants). Questions are grouped into one of three categories: attitude toward preparedness ("Attitude"), availability and accessibility of software and technical assistance ("Technology"), and demographics that may be related to preparedness and prior experience ("Demographics"). Possible responses are noted after each question.

Question category	Question	Response
Attitude	Overall, my college/university was well prepared for the transition to remote learning during the spring 2020 term.	Level of agreement (Strongly agree—Strongly disagree)
	The administration at my college/university was well prepared for the transition to remote learning during the spring 2020 term.	Level of agreement (Strongly agree—Strongly disagree)
	The instructors at my college/university provided experiences that were equal in quality to those in the classroom.	Level of agreement (Strongly agree—Strongly disagree)
	The same academic standards used in my in-person instruction were applied after my course(s) moved to remote learning platforms.	Level of agreement (Strongly agree—Strongly disagree)
Technology	The students at my college/university had the appropriate access to technology following the transition to remote learning.	Level of agreement (Strongly agree—Strongly disagree)
	I was able to re-create all my class(es), including all labs/clinicals/recitations/etc. (if applicable), for remote learning without issue.	Level of agreement (Strongly agree—Strongly disagree)
	All resources for supporting remote instruction were well communicated to the faculty.	Level of agreement (Strongly agree—Strongly disagree)
	Technical assistance from my college's/university's IT staff was available in a timely manner if needed during the transition from on-campus to remote learning.	Level of agreement (Strongly agree—Strongly disagree)
	I had or was provided the appropriate equipment/resources (both hardware and software) to easily move my class(es) to remote learning platforms.	Level of agreement (Strongly agree—Strongly disagree)

	My students had or were provided the appropriate equipment/resources (both hardware and software) to easily move my course(s) from on-campus instruction to remote learning platforms.	Level of agreement (Strongly agree—Strongly disagree)
Demographics	How many online courses have you taught prior to the spring 2020 term?	None; 1—3; 4—6; 7—9; 10 or more
	How many online courses have you taken prior to the spring 2020 term?	None; 1—3; 4—6; 7—9; 10 or more
	Which of the following describes your college/university?	Private; Public
	Which of the following describes the location of your college/university?	Large city—Small town (as defined by the U.S. Census)
	Where is your college/university located?	U.S. state or Canadian province

Table 2: *Student survey questions*

List of questions developed by the Midwestern university to assess students' attitudes toward the emergency shift to remote learning that occurred in spring 2020 (n = 671 participants).

Question	Response
Please select your college from the list below.	List of colleges at the university
I have internet connection at my location	Yes/No
My rating of my internet connection is….	1=very poor; 2=poor; 3=moderate; 4=good; 5=excellent
I am sharing the internet with others at my location.	Yes/No
I am using the following devices to learn online (select all that apply).	Desktop/Mac; Tablet; Personal laptop/Macbook; iPad; Mobile phone
My overall satisfaction with my university's IT support is….	Very satisfied; Satisfied; Neutral; Unsatisfied; Very unsatisfied
My overall satisfaction with my online learning experience at my university is….	Very satisfied; Satisfied; Neutral; Unsatisfied; Very unsatisfied
My overall satisfaction with my university's student services (advising, counseling, career service, financial, etc.) is….	Very satisfied; Satisfied; Neutral; Unsatisfied; Very unsatisfied
Overall, I feel stressed out….	Almost always; Most of the time; Some of the time; Almost never; Never
I need my university to assist me with (or biggest obstacles to keep learning online for summer/fall)….	Open comment box

Results

A total of 130 university/college faculty responded to the first survey. A majority of the survey respondents were from public colleges and universities in towns with 10,000-49,999 residents in the Midwest (Table 3). The majority of faculty had little or no prior online teaching experience and little or no prior experience taking online courses.

Faculty Survey: Attitude Towards Preparedness

Overall, faculty had a positive outlook on the preparedness of their institution for the emergency shift to online instruction in the spring 2020 semester. A majority (69.7%) of faculty agreed that their college/university was well prepared for the transition to remote learning during the spring 2020 term (Table 4). Comments included such statements as: "The tools were in place for a significant number of faculty to succeed." Another stated, "Infrastructure for online learning was in place, and resources to help faculty were quickly put in place for those who needed it." While another commented, "My school took action immediately and did well in giving great direction as to ways to help students participate in an online environment instead of in the classroom." More than half (58.3%) of faculty agreed that the administration at their institution was well prepared for the transition. Comments included, "The administration was prepared and adapted to the changing situation." Another individual stated, "The administration all took swift and immediate action during Spring Break week which should be commended." Others who were less impressed with administration preparedness stated, "They (administration) relied on the ability of others to carry out the daily reality of remote teaching and learning." Just under half (48.1%) agreed that instructors at their institution were able to provide experiences that were equal in quality to those in the classroom, while over half (56.6%) agreed that the academic standards applied prior to the move to remote learning remained the same after the transition. Faculty commented, "My colleagues and I were very focused on meeting the student learning outcomes without extra burden to the students and planned experiences that met the outcomes." Another stated, "I think faculty did the best job they could, but for many classes it is difficult to replace the in-class experience and transition in such quick notice."

Faculty Survey: Availability and Accessibility of Technology and Resources

Just over half (53.5%) of faculty were able to re-create all classes (including labs, clinicals, recitations) without issue (Table 5). A majority (71.4%) had or were provided the appropriate equipment and resources to easily move their courses from on-campus instruction to remote learning platforms. Faculty agreed that resources for remote instruction were well communicated (74.7%), and technical assistance was available in a timely manner (62.6%). Many faculty made general comments that included, "….having everything we needed."

A large majority (73.4%) of faculty agreed that students at their institution had the appropriate access to technology following the transition to remote; however, less than half of faculty (45.5%) agreed that their students had or were provided the appropriate equipment to easily move courses from on-campus to online instruction (Table 5). Faculty seemed to be aware of

this through their comments as well, including, "I imagine some students are trying to do everything on their smartphones which is a poor tool." Another stated, "Many students were sharing bandwidth and devices with others in their households, leading to challenges in adequate delivery, especially if it was asynchronous delivery." Yet another indicated, "The students were entirely on their own to procure a device that might allow them some level of access."

Faculty Survey: Associations with Prior Online Experience

Greater numbers of online courses taught prior to the spring 2020 term were associated with higher levels of agreement with the statement, *Overall, my college / university was well prepared for the transition to remote learning during the spring 2020 term* ($\hat{y} = -0.234, se = 0.116, z = -2.018, p - value = 0.044$). The number of online courses taken prior to the spring 2020 semester was not associated with faculty outlook on the overall preparedness of their institutions ($\hat{y} = -0.015, se = 0.123, z = -0.121, p - value = 0.904$).

Greater numbers of online courses taught prior to the spring 2020 term were associated with higher levels of agreement with the statement *I was able to re-create all my classes, including all labs / clinicals / recitations / etc. (if applicable), for remote learning without issue* ($\hat{y} = -0.303, se = 0.115, z = -2.634, p - value = 0.008$). The number of online courses taken prior to the spring 2020 semester was not associated with faculty perceptions of their ability to re-create all classes ($\hat{y} = -0.171, se = 0.112, z = -1.526, p - value = 0.127$). One faculty stated, "This transition really didn't affect me or my courses much as I was already teaching some online courses and knew how to adapt."

Student Survey Responses

A total of 671 students responded to the survey created by the Midwestern university's instructional design services. Nearly all students (98.1%) had internet at their location following the switch to remote learning. Most students rated their internet connection as good or excellent (66.3% = 42.6% + 23.7%) and reported that they were sharing their internet services with others at their location (94.3%) (Table 6). A large majority of students (87.2%) were using personal laptops or Macbooks for their online learning. Nearly half (47.2%) of students reported using a mobile phone, 18.6% desktop or Mac, 14.0% iPad or tablet. Over half of students (53.5%) used multiple devices for their online learning.

Overall, nearly half of students were satisfied (33.4%) or very satisfied (9.8%) with their online learning experience, but just over a quarter were unsatisfied (17.7%) or very unsatisfied (10.0%) (Table 6). The remaining respondents (28.8%) were neutral about their online learning experience. Comments from both sides included such statements as: "My professors have

done an amazing job adapting to the change and putting all the resources online that need to be there," yet others stated such things as, "The transition was very rough and there was a lot of content, assignments, and exams that were difficult to find and properly prepare for." Many other students included statements such as: "Some professors have very limited knowledge on how to use technology, which definitely hindered my learning experience. The university should have done more beforehand." Although the majority of quantitative survey results indicated students being neutral to highly satisfied with their online learning experience, the qualitative comments indicated differently. Although the comment section was optional for students to complete, many frustrations, issues, and concerns were identified, many of which could have been fixed had the faculty member known about them during the course. Such comments included, "Professors seemed to take it easy and not do much for me." Another stated, "Some professors did not communicate with me or others much." And another, "Some assignments were unrealistic given the situation we were placed in or gave us more assignments because he/she thought we had nothing else to do."

Most students were satisfied (41.9%) or very satisfied (16.0%) with the IT support available at their institution, while 37.7% were neutral, 3.3% were unsatisfied, and 1.2% were very unsatisfied. Student comments included general statements such as: "Every time I had a question for the IT support, they were always very timely in their responses as well as having reliable solutions to the problem."

***Table 3**: Relative frequencies of the responses to demographic questions on the faculty survey*

Question	n	Response	Relative frequency (%)
Which of the following describes your college/university?	99	Public	99.0%
		Private	1.0%
Which of the following describes the location of your college/university?	99	A town with 10,000-49,999 residents	85.9%
		A small city with 50,000-99,999 residents	7.1%
		A city with 100,000-249,999 residents	6.1%
		A large city with at least 250,000 residents	1.0%
Where is your college/university located?	97	Midwest	99.0%
		West	1.0%
How many online courses have you taught prior to the spring 2020 term?	99	None	38.4%
		1-3	22.2%
		4-6	10.1%
		7-9	7.1%
		10 or more	22.2%
How many online courses have you taken prior to the spring 2020 term?	98	None	38.8%
		1-3	29.6%
		4-6	9.2%
		7-9	7.1%
		10 or more	15.3%

Note. **Percentages do not sum to exactly 100% due to rounding.**

Table 4: *Relative frequencies of the responses to questions focused on faculty attitudes toward preparedness for the emergency shift to online instruction in spring 2020*

Question	n	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	Not Sure / I do not know
Overall, my college/university was well prepared for the transition to remote learning during the spring 2020 term.	109	16.5%	53.2%	13.8%	11.0%	5.5%	NA
The administration at my college/university was well prepared for the transition to remote learning during the spring 2020 term.	108	15.7%	42.6%	18.5%	18.5%	4.6%	NA
The instructors at my college/university provided experiences that were equal in quality to those in the classroom.	106	12.3%	35.8%	12.3%	28.3%	11.3%	NA
The same academic standards used in my in-person instruction were applied after my course(s) moved to remote learning platforms.	99	25.3%	31.3%	4.0%	24.2%	11.1%	4.0%

Note. **Percentages do not sum to exactly 100% due to rounding. The response *Not Sure / I do not know* was not provided as an option for all questions. These are indicated by *NA*.**

Table 5: *Relative frequencies of the responses to questions focused on the availability and accessibility of software and technical assistance following the transition to online instruction in spring 2020*

Question	n	Strongly agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Strongly disagree	Not Sure / I do not know
The students at my college/university had the appropriate access to technology following the transition to remote learning.	105	32.4%	41.0%	13.3%	9.5%	3.8%	NA
I was able to re-create all my classes, including all labs / clinicals / recitations / etc. (if applicable), for remote learning without issue.	101	19.8%	33.7%	6.9%	15.8%	21.8%	2.0%
All resources for supporting remote instruction were well communicated to the faculty.	99	41.4%	33.3%	9.1%	9.1%	6.1%	1.0%

Technical assistance from my college's / university's IT staff was available in a timely manner if needed during the transition from on-campus to remote learning.	99	48.5%	14.1%	8.1%	6.1%	4.0%	19.2%
I had or was provided the appropriate equipment/resources (both hardware and software) to easily move my class(es) to remote learning platforms.	98	41.8%	29.6%	13.3%	9.2%	4.1%	2.0%
My students had or were provided the appropriate equipment/resources (both hardware and software) to easily move my courses from on-campus instruction to remote learning platforms.	99	17.2%	28.3%	16.2%	13.1%	10.1%	15.2%

Note. **Percentages do not sum to exactly 100% due to rounding. The response *Not Sure / I do not know* was not provided as an option for all questions. These are indicated by *NA*.**

Table 6: *Relative frequencies of the responses to questions on the student survey*

Question	n	Response	Relative frequency (%)
I have internet connection at my location	671	Yes	98.1%
		No	1.9%
My rating of my internet connection is….	671	1 = very poor	3.0%
		2 = poor	5.4%
		3 = moderate	25.3%
		4 = good	42.6%
		5 = excellent	23.7%
I am sharing the internet with others at my location.	671	Yes	94.3%
		No	5.7%
I am using the following devices to learn online (select all that apply).	671	Desktop/Mac	18.6%
		Tablet	3.0%
		Personal laptop/Macbook	87.2%
		iPad	11.0%
		Mobile phone	47.2%
		School loaned tablet	0.0%
		School loaned hotspot	0.3%
		Shared device	0.6%
My overall satisfaction with my university's IT support is….	671	Very satisfied	16.0%
		Satisfied	41.9%
		Neutral	37.7%
		Unsatisfied	3.3%
		Very unsatisfied	1.2%

My overall satisfaction with my online learning experience at my university is….	671	Very satisfied	9.8%
		Satisfied	33.7%
		Neutral	28.8%
		Unsatisfied	17.7%
		Very unsatisfied	10.0%
My overall satisfaction with my university's student services (advising, counseling, career service, financial, etc.) is….	671	Very satisfied	20.3%
		Satisfied	47.7%
		Neutral	25.8%
		Unsatisfied	4.2%
		Very unsatisfied	2.1%
Overall, I feel stressed out….	671	Almost always	15.8%
		Most of the time	26.23%
		Some of the time	35.32%
		Almost never	15.5%
		Never	7.15%

Note. **Percentages do not sum to exactly 100% due to rounding. For the question, *I am using the following devices to learn online*, percentages do not sum to 100% because this was a "select all that apply' question.**

Discussion

This study identified faculty and students' perceptions related to their online teaching and learning experience when the COVID-19 pandemic arose, and most higher education institutes went to virtual classes. The results indicated fairly high satisfaction rates of faculty's thoughts on preparedness and access to technological resources and tools. In addition, students were fairly satisfied with the transition to online teaching and learning using quantitative measures. However, qualitative comments indicated otherwise, with many negative comments related to lack of communication between faculty and students, higher expectations given without explanations, more assignments without relationship to the course objectives or content, technology issues that arose due to faculty's requests, and feelings that faculty were not prepared or trained for online teaching or virtual learning. A similar study conducted in India showed similar students' perceptions of online learning due to COVID-19, such as lack of communication, technology issues that arose, and poor teaching skills (Muthuprasad et al., 2021). Yet another study conducted in Jordan found that online learning was difficult, especially for those who were deaf and hard of hearing students, and other issues such as a lack of interaction and motivation, technical and Internet issues, data privacy, and security (Almahasees, et.al., 2021). These were also similar to this study; however, mention of using regular, reflective practices were not mentioned as potential solutions.

These results indicate the need for faculty to be trained in designing and delivering effective online courses, how to use frequent reflective and metacognitive strategies to better online pedagogy, and how to communicate more with students through a virtual environment.

Specifically, results indicate faculty need to ask for more frequent student feedback throughout the duration of the online course in order to gauge interest, ideas, and perceptions of student learning, engagement, and online needs so that effective teaching exists throughout the course duration and beyond. Faculty also need to plan and adapt current online teaching strategies so students can easily access the information using their laptops as well as smartphones, an instructional tool that nearly half of students responding used.

Implications for Practice

Reflective practices offer detailed information, a process to better facilitate teaching, learning, and understanding. Although many faculty often use reflective strategies to better their teaching, not all do, leaving students in despair when technology is unavailable. Technology tools are challenging to use, directions are unclear, and/or communication is absent. In addition, faculty may use reflective practices, but students may not view them as such specifically because of the varied tools used. Or faculty may not use the data gained from their reflective tools back into their courses or have administration who do not offer professional development opportunities, so faculty are aware of potential reflection tools to use and how. This was more apparent during the COVID-19 pandemic when many faculty were forced to teach online, and reflective practices were not used frequently, leaving many faculty's perceptions of online teaching and learning as being positive and rewarding, counteracting most students' perceptions.

Although the COVID-19 pandemic quickly changed higher education in various ways, including moving all courses to online delivery, future studies should continue to focus on assessing faculty and student's perceptions of quality online teaching and learning, the tools used to gain access to the online courses, and how reflective practices should be described and applied frequently throughout the course duration and future courses to come to better everyone's online experience overall. Future studies should also collect data for a longer period than this selected time frame, as well as times when emergency protocols aren't mandated, as these generalizations may change due to more time, preparation, and self-selection of teaching online or taking online courses.

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