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## Student Participation in a Virtual Classroom from a Faculty Perspective

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### Abstract

**Aim:** The aim of this study was to ascertain the lived experience of nursing faculty facilitating participation in virtual classroom activities. This study sought to explore experiences associated with moving from a physical classroom to a virtual classroom in the midst of a pandemic.

**Background:** Literature regarding classroom participation has mainly been associated with the physical classroom. For nursing faculty who struggle to increase student participation in a physical classroom, facilitating student willingness to participate in virtual classroom activities can be even more difficult.

**Design:** This was a qualitative descriptive study utilizing a phenomenological framework. Semi-structured interviews were conducted during the fall 2020 semester. Purposive sampling was utilized to allow the researchers to recruit full-time faculty members who met the inclusion criteria.

**Method:** All interview were transcribed and uploaded into ATLAS.ti 9 for analysis. Each of the transcripts was read multiple times and codes were developed. The codes were clustered into five themes.

**Conclusion:** The themes developed included: 1) Initial difficulties of transitioning to the virtual classroom; 2) While to environment had changed, the students had not changed as much and many of their classroom behaviors remained; 3) Technology issues were a problematic for faculty; 4) There were visual connection issues that hampered some participation methods; and 5) It was difficult to see whether students were engaged in course material.

**Keywords:** Education technology; Participation; Virtual classroom

### Review of Literature

Classroom participation has predominantly been associated with participation in a physical classroom. Participation is considered crucial for active learning and faculty consider classroom participation to be evidence of active engagement [1]. A variety of techniques are utilized to increase classroom participation including student led lectures, videos, clicker technology, and case studies discussions [2]. Classroom participation is a complex process affected by numerous factors including student and faculty traits, course structure and class size, and classroom configuration [3]. It is considered one of the mechanisms by which students are provided the opportunity to fine-tune their comprehension of factual knowledge within the safety of the classroom [4]. Because nursing students are required to utilize and apply the concepts acquired in classroom learning to real life clinical situations, it is essential that students be provided with the opportunity to actively participate in class.

Students are aware of the classroom environment and monitor it for signs that can either encourage or discourage their participation [4]. Nursing students have reported that knowing classmates by their first name, coupled with the opportunity to work with other students on projects and in-class activities, was likely to increase their willingness to participate in class [5]. However, students also report a reluctance to contribute during class activities because they fear being admonished for providing an incorrect answer or appearing incompetent.

There are multiple forms of classroom participation; these include silent participation, para-participation and negative participation. Most students in a physical classroom are silent participants [6]. The silent participant is a student who pays attention, nods and smiles when appropriate but rarely engages in class discussions. Para-participants are silent participators with one addition - they will initiate contact with the course instructor either before or after class but rarely during class [6]. Usually, these students consider this contact to be an appropriate substitute for classroom participation. Negative participants are those who interrupt or monopolize classroom discussions, become disagreeable, or make others uncomfortable with their comments [7]. In addition to actively participating in the classroom discussion, these additional forms of participation can take place in the virtual classroom.

Classroom technology is useful to faculty in all classrooms and at all levels of nursing education. For some faculty, technology is a more difficult tool to incorporate in their current teaching methodologies. Pre-pandemic use of technology in the classroom was an option that some didn't fully embrace. However, in early 2020 the use of virtual classes became mandatory and presented concerns within the faculty. A major faculty concern was keeping students engaged and participating while maintaining quality and rigor. For nursing faculty who struggle to increase student engagement and participation in a physical classroom, facilitating student willingness to participate in virtual classroom activities can be even more difficult. Little is known about encouraging participation and engagement in a virtual classroom. Therefore, the purpose of this study was to explore nursing faculty experiences associated with moving from a physical classroom to a virtual classroom in the midst of a pandemic. Additionally, we sought to identify those factors that nursing faculty recognized as either encouraging or discouraging student engagement and participation.

## Methods

### Design and Sample

This was a qualitative descriptive study utilizing a phenomenological framework to ascertain the lived experience of nursing faculty. Institutional Review Board approval was sought and obtained from West Texas A&M University. Semi-structured interviews were conducted during the fall 2020 semester. Purposive sampling was utilized to allow the researchers to recruit full-time faculty members who met the inclusion criteria of a) having previously taught in a physical classroom setting on campus and b) having been abruptly repositioned to a virtual classroom due to the COVID-19 pandemic. Eight faculty members were contacted by the primary investigator via phone and in-person and all agreed to participate. Written informed consent was obtained from each.

### Data Collection & Analysis:

Pseudonyms were assigned to each participant. Data collection was accomplished through semi-structured telephone or face-to-face interviews. The interviews ranged from 30 to 60 minutes. Each interview was audio recorded and a verbatim transcription was completed and all transcripts were reviewed for accuracy. Five semi-structured questions were asked of each participant as well as follow-up questions in keeping with the phenomenological framework (Table 1).

Tell me about your experience encouraging student participation in a virtual classroom.
Describe something you may have said or done to encourage participation from your students in the virtual classroom.
Describe any differences you see in student participation in the physical classroom versus the virtual classroom.
What challenges have you faced in your attempts to encourage participation in the virtual classroom?
What would you like for me to know about your experience in the virtual classroom regarding participation that you haven't had an opportunity to share?

**Table 1:** Semi-structured Interview Questions.

All interview transcriptions were uploaded into ATLAS.ti 9, a program for qualitative data analysis. Each of the transcripts was read multiple times and codes were developed. These codes were clustered into themes. Each of the themes were discussed with the other researchers involved with the project and consensus was reached.

## Findings

Through qualitative data analysis, the following five themes were identified by faculty as relevant to their experiences.

### Theme 1: Initial Difficulties

Although the faculty members in the study were not new to teaching, most expressed some level of difficulty in transitioning from the traditional classroom to a virtual one. For example, Participant 2 stated “I would like to try to do concept mapping. But virtually, I’m not sure how I would functionally do it.” Another recounted, “If it’s a math problem or something like that, then we’ll just kind of work on it together. I’ll just have all the students participate on it. And online it’s hard to do that”. The use of hand motions, walking around, and physical demonstrations seemed to be hindered in the virtual environment, “...The way I lecture sometimes is with hand motions or use things to describe some of the concepts. That’s one of the things I struggled with”. Participant 3 stated, “I didn’t feel I knew them well, because I really wasn’t with them...I was just thankful that, they were keeping themselves and their families safe and I was doing the same.”

The pandemic resulted in many sudden changes for faculty in order to continue the semester and ensure that students would be able to complete their coursework. However, some were more comfortable than others using technology to transform their courses into something that would be available as a synchronous virtual class. One faculty member stated while discussing the classroom change from physical to virtual, “My brain is just exhausted, trying to change things up every week, just trying to go with the flow”.

Faculty participants expressed difficulty in monitoring students in the virtual environment. “I could never tell if they really got it.” and “...you can only kind of engage into a conversation with the students, or you can kind of tell with being online...it’s hard to get a look at all the students”. Others were able to engage more closely with students by having another faculty member monitoring the chat while lecturing. These faculty members felt that the number of questions increased because there was a dedicated person for chat questions; “So it worked better with a second person because she could read those questions and they were more apt to ask them”. Overall, faculty expressed the need for adaptation to their usual teaching methodologies.

### Theme 2: The Environment has changed but the Students Have Not

Student behaviors, learning needs, and expectations remained much the same as in the pre-pandemic environment; however, pandemic safety measures required adaptation to new ways of teaching, learning, and communicating. For example, in skill return demonstrations, “We even like for them to demonstrate to us, how they did the venipuncture, we had them upload a video of them actually doing it. And we were able to monitor that, but there was still a few students who, they just needed more practice and maybe more hands-on with an instructor”. Participant 5 remarked that in the physical classroom, several students would come up to her after class to ask further questions. However, in the virtual classroom students rarely asked questions after class. “I think it’s sort of out of sight, out of mind.” Conversely, Participant 8 had a different experience concerning physical and virtual classrooms. “I’ll get emails or course messages or texts after maybe the next day or so, whereas in the Zoom session, it’s usually right after the sessions.”

Participant 8 noted that affirmation and reassurance was needed more often in the virtual sessions, “I constantly have to remind them they’re just here for learning, so any type of question will be okay.” Participant 1 noted, “They’re not going to get as embarrassed, I guess, to ask questions. They’re more brave and bold on Zoom.” However, the behaviors didn’t seem to change with some students, “...there’s that one student always piping up and asking questions and people get fatigued. We have a lot less fatigue because in some ways that can be controlled”. Participant 1 noticed very similar pre-pandemic student behaviors. “If it’s the student that is known for asking questions...other students are more likely to just kind of roll their eyes and get on their phone.” However, Participant 3 stated, “I was hoping to see more questions, so that I can tell that they were engaged.” Participant 8 recounted that students will still try to gauge whether it is okay to ask a question or make a comment, “Sometimes you can just sense it, that they don’t want to ask if everybody seems tired or they feel like they’re holding everybody in class when maybe it’s time to leave...a lot of the time they’ll send a private message instead.”

Because students had voiced to faculty that they missed being in class, there was genuine concern that students would not perform as well in a virtual environment versus the traditional physical classroom. However, most faculty stated they had not seen a significant difference in grades from previous semesters. Participant 8 stated, “It’s about the same. I think the range may be a little bit different. I’ve actually had a few lower scores, not by all that much.”

### **Theme 3: Technology Issues**

Technology based issues is another prevalent theme. During the beginning of the pandemic, faculty and students sheltered in place. Although all the physical university classrooms are considered smart classrooms and are equipped with computer-based teaching lecterns and large viewing screens, teaching and learning from home was dependent upon the resources available within the home. Later in the pandemic, faculty and students not in quarantine were able to use university resources, but classroom size was limited due to social distancing efforts and constraints. This resulted in two options, 100% virtual classroom or a hybrid option which included some students participating virtually and some participating in the physical classroom with the faculty member present. Some participants lamented having to stay at the computer and not being able to walk around. Participant 5 said, "I'm a big walker. I love to walk around the classroom, and when somebody answers a question well, I give a pat on the back or just kind of engage with people...you're not able to do that on Zoom, and I really miss that."

New virtual software was made available to faculty; this new technology presented some technical support concerns. Faculty reported that they had little time to learn and practice before they began using the new technology. For example, "I was going to show two or three different videos on different content that I was going to cover. And because I am not able to technically do that well, I would show all the videos at the beginning of class rather than throughout". There were other concerns, "I have had a lot of trouble with getting (recorded) Zooms uploaded and accessible to the students".

Regarding other technical issues, some students reported to Participant 1 "My internet is not the best." Also, Participant 5 stated "And so things will freeze up, or they'll have to refresh their screen, and they miss sections." Another reported, "I have one student that goes to the library and they're not able to engage as much, but they put in their headphones, they type in the chat, but they won't speak up because they are in the library". Wi-Fi connections seemed to be a recurring problem, "With Wi-Fi connections and things like that, but it's hard to keep track of who's in the class and who's not because you're busy with the screen-share". However when students are having issues, faculty reported that "Some students would send me or their peers a private message". Because most students were initially unfamiliar with virtual classroom software, they sometimes misused certain options, including group and private chat features. Participant 5 reported, "I'll be honest with you, I was shocked at the foul language, the kind of rude remarks, the just kind of off-color jokes, and things that were going on in the chat box, that I had no idea was going on. And I was, quite honestly, a little bit hurt about that." Additionally, there were comments that faculty would not have been aware of or known, except for the chat feature. For example, "It was kind of like side jokes with some acronyms that I'm pretty sure that you should not use in public...maybe somebody did ask a question and somebody else would make a rude comment to them".

### **Theme 4: Physical/visual Connections**

There were varying opinions concerning physical connections between faculty and students. Participant 1 believes "They are more brave and bold on zoom because they are in their own room, they're in their safe environment...they're just more attentive and they pay attention more." In contrast, Participant 3 reported "Students maybe, get distracted more if they're at their home." Participant 7 concurs with the notion of participation on Zoom, "I think it's less. As far as the virtual classroom, I think it's less without their videos on. And I had them all turn their video on one day and one was blow drying their hair. And so I really think they might log on, but I'm not sure they're actually actively watching or actively engaged." Other physical connection issues included, "So when we had class, I wasn't able to see their eyes were on me and they were engaged, like you do in a classroom". Finally, Participant 3 noted "Some students have said that they like to be in person due to distractions."

Participants recounted that the virtual classroom made it more difficult to encourage students to participate in the course discussions. They also reported that many students do not turn on their video in the virtual classroom. "Well, most of the students when using Zoom have their video turned off...I'm okay with that...Sometimes students are embarrassed about the surroundings that they live in, or they may not be dressed appropriately, or whatever". Participant 6 recounted "I have done things like ask them to turn on their screens, ask them to reply in the chat so that I can see them...There are some students who are concerned about where they're taking the class." Even though most faculty participants felt that both verbal and nonverbal communication with students decreased in the virtual classroom, they also reported they received more email and course message communication after the class session had ended. Participant 4 agreed, "I get a lot of course messages afterward saying, I'm just clarifying. I like things in writing."

In response to asking how faculty know whether their students are engaged and participating, Participant 1 responded, "...It's not that it requires a response, but just like body language, like nodding yes, nodding no, hand signals, thumbs up, thumbs down. Really that's how I use them to see if I'm on the right track or see if they are paying attention...Is their body language because of everybody saying yes at the same time?" Participant 2 acknowledged difficulty in making physical connections in a virtual classroom, "They can hide behind the masking of a dark screen. They can hide behind the PowerPoints. They can hide behind someone not being able to call on them."

### **Theme 5: Difficulty in Making Learning Connections**

Teaching and learning in a virtual classroom or hybrid learning environment required some changes by the faculty to encourage not only physical connection but the ever-important learning connection. Participant 3 reported, “What motivates a teacher to teach I think, is the relationship with the students” As they compared physical to virtual classrooms, “...In virtual, I didn’t have as close a relationship, I don’t think.” The consensus among faculty participants revealed that students who speak in class would be more likely to speak in a virtual classroom and the quiet students remained quiet. Some relied on cold calls, by randomly asking students a question to increase student interaction. “I generally will reach out to the quiet ones”. Participant 6 stated that it required making adjustments to teach in a virtual classroom and often encouraged students to answer through chat. “They’ll type it in and answer it that way, much more than speaking out.” Conversely Participant 1 experienced connections with more reticent students, “I’ve had a few surprises on Zoom where a student that rarely talks, rarely makes eye contact, and will say something in Zoom.” Overall, faculty stated that some students had communicated a preference for a physical classroom. Participant 7 stated “They felt like they would do better in class.” Participant 5 concurs, “I don’t think you can ever underestimate the value of being in class with students. I don’t think you can ever minimize that.”

With respect to virtual classes, there was evidence students were not always engaging in the course material during class time. When asked, Participant 5 reported “Now, I think there probably was a couple of different reasons for that. First, because we weren’t in the classroom, I didn’t see whether they were falling asleep in class, or dozing off, or playing on their phone, or all of that kind of thing.” Finally, when asked about encouraging participation, several reported utilizing a learning platform such as the Kahoot! application or a Zoom quiz; “This tells me the number of students who are participating. It gives me their name...but it’s harder than when we’re face-to-face. Then I can see their expressions, I can see their attentiveness”.

Another issue noted by faculty was related to miscommunication about assignments and due dates. Participant 1 related, “I am noticing there is more of ...I didn’t know that was due then or I didn’t know I had to complete these practice quizzes before I did the actual quiz.” Because classes did not meet in person, Participant 4 reported, “They ask - do I physically bring my assignment to school or do I email it? There has just been a lot of confusion about this. I am doing my best to keep this in line”.

### **Discussion**

Utilization of synchronous virtual classroom technology presents multiple challenges. Faculty members realize the importance of classroom participation and encourage students to speak up in class. However, they describe struggling with incorporating their usual methods of encouragement into the virtual classroom. They also report not realizing how much they have relied on non-verbal cues to assess classroom participation. O’Flaherty & Laws [8] state that while face-to-face communication with students is considered the gold standard in nursing education, on-line courses continue to grow in popularity largely due to economic forces. This can increase the struggle for faculty members who wish to see their student audience in person and be able to provide immediate feedback to class activities, questions, and discussions.

Helping students integrate concepts and ideas from content into a broader framework is essential in education. Establishing connections with students is also very important and the virtual classroom environment can help foster these connections [9]. Most of the participants in our study indicated that while the use of a virtual classroom was beneficial during the pandemic, the transition from face-to-face classes to the virtual classroom was not without complications. However, they also indicated that they believe virtual classroom technology is here to stay at least in some manner.

### **Limitations**

This was a small study where the participants were recruited from a single university setting suggesting caution in the generalizability of our findings to other settings. A larger study from multiple settings is suggested.

### **Recommendations**

Most students require direction and positive reinforcement from faculty to be active participants in a physical classroom as well as in the virtual classroom. Implications for providing this reinforcement are plentiful and we offer the following recommendations:

Establish student rules for participation before classes begin including: a) have your video on, b) be prepared to be seen by others in the class, c) understand that your participation is expected, d) be in a quiet area to minimize distraction.

Faculty members should consider having a second person to monitor the chat feature, answer questions, and help monitor the classroom activity.

Encourage students to chat with one another about the course topic. Also encourage students to cheer each other on with a “Way to go” or “That’s Great”.

Be familiar with and use all features of your virtual classroom technology such as raise hand, recordings for later viewing, breakout room options, and sharing the screen correctly to enhance the class experience. Also, consider augmenting class activities with additional participatory tools such as clickers, other response systems, and virtual applications.

Wait until everyone leaves the virtual classroom; don’t end the session until all students have logged out. This allows reticent students to have a time to ask questions.

Consider a hybrid/HyFlex option for students who prefer physical classroom instruction.

As faculty seek to find pedagogically appropriate ways to present, teach, and communicate course concepts in a meaningful and productive manner, it becomes incumbent upon them to be willing to stretch their abilities and find ways to master new technology.

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