

## ORIGINAL RESEARCH

# Implementation of a flipped classroom: Nursing students' perspectives

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## ABSTRACT

The need to update nursing curriculum has prompted the development of new pedagogies designed to engage students and help them develop clinical reasoning skills. This descriptive phenomenological study explored student experiences of “flipping the classroom” in two Medical/Surgical courses. “Flipping the classroom” is in contrast to a traditional class where lecture is given in class and assignments are sent as homework. Instead, with the flipped classroom, lecture is sent as homework and class time is devoted to active learning assignments. By making the lecture available to students outside of the classroom, class time can then be spent on innovative learning activities designed to engage the students in actively learning the lecture material. The flipped classroom can enhance the learning experiences of nursing students in Medical/Surgical courses; however, there are challenges related to this transformative process. The shift from a traditional, passive learning approach to a non-traditional active learning method is discussed through the lived experience of students as recipients of this innovative teaching strategy.

**Key Words:** Phenomenological, Flipped classroom, Student, Active learning

## 1. INTRODUCTION

Nurse educators are in a prime position to implement curricular changes to better prepare the future generation of nurses. Employing new teaching strategies to enhance clinical reasoning skills was embraced by the faculty of two Medical/Surgical courses at a University in the Southern United States. Using an innovative teaching concept known as “flipping the classroom”, students were able to view pre-recorded lecture videos prior to class and use class time for simulation activities, case study analysis, question and answer sessions, and discussions. “Flipping the classroom” is in contrast to a traditional class where lecture is given in class and assignments are sent as homework. Instead, with the flipped classroom, lecture is sent as homework and class time is devoted to active learning assignments.<sup>[1–3]</sup> These active learning approaches were designed to make the Medical-Surgical content more engaging and meaningful while helping students

“make connections” from theory to practice.

The purpose of this descriptive phenomenological inquiry was to understand the lived experiences of students participating in the flipped classroom, an innovative teaching strategy, new to the Bachelor of Science in Nursing (BSN) curriculum at a University offering nursing programs from the BSN level to the PhD level. A gap in the nursing literature indicates there is a lack of research into “flipped classrooms” using a qualitative lens. The innovative teaching strategy employed will be generally described throughout as “flipping the classroom”.

### Literature review

The current nursing curriculum is overloaded with classroom time relying heavily on automated software presentations and ineffective teaching strategies that are not meeting the needs of today’s nursing students or healthcare facilities.<sup>[4]</sup> In a

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call for a radical transformation of nursing education, Benner advocates for transforming the classroom into “a place of rich and powerful learning”.<sup>[3]</sup> Nursing programs are responding to this challenge by implementing student-centered active learning strategies to encourage clinical reasoning.<sup>[5]</sup> By having the students review the classroom lecture prior to class, students are then able to participate in clinical scenarios designed to increase clinical reasoning skills.

Student-centered learning is also achieved in a “flipped classroom” which as defined by Keen<sup>[1]</sup> “allows students to watch lectures at home. . . and also allows for concept engagement to take place in the classroom with the help of the instructor” (p. 65). In other words, by making the lecture available to students outside of the classroom, class time can be spent on innovative learning activities designed to engage the students in actively learning the lecture material.<sup>[1-3,6]</sup> The use of flipped classrooms can be seen across several disciplines such as high schools,<sup>[1]</sup> nursing programs,<sup>[3,5,6]</sup> accounting courses,<sup>[7]</sup> technology classes,<sup>[8]</sup> and radiology programs.<sup>[2]</sup>

By utilizing a “flipped classroom” approach, instructors are able to successfully assist their students in absorbing and synthesizing material.<sup>[3]</sup> In the same manner, students are able to review the recorded lectures at their convenience and as often as they need to achieve a deeper understanding of the concepts while experiencing increased interactions with their instructors and classmates.<sup>[1]</sup> Furthermore, instructors are able to determine their students’ understanding of the material and provide additional instructions as needed.<sup>[2]</sup>

Our colleagues, Missildine, Fountain, Summers, and Goselin<sup>[9]</sup> used a quantitative approach to this study and compared grades for students who participated in the flipped classroom with grades from students in past semesters. They documented a 2-point increase in exam scores on a scale of 0-100 for the students in the flipped classroom compared to the previous students.

## 2. METHOD

### 2.1 Design

Phenomenology investigates and seeks to understand life experiences through direct communication of the researchers and the study participants.<sup>[10]</sup> Edmund Husserl is credited with developing the philosophy of descriptive phenomenology in an effort to fully describe the experiences of everyday life.<sup>[10]</sup> Descriptive phenomenology was chosen for this study to understand the lived experiences of BSN students participating in the initial implementation of a “flipped classroom”.

In order to understand the everyday experience of the students and to ensure trustworthiness and rigor of the study, the

following components of descriptive phenomenology were incorporated; (a) bracketing, (b) intuiting, (c) analyzing, and (d) describing.<sup>[10]</sup> Prior to data collection, the researchers attempted to neutralize their feelings and understandings of the experience in an effort to allow different possibilities to emerge. After data collection, the researchers were open to new meanings of the experience as described by the students who experienced it. These techniques are known in descriptive phenomenology as bracketing and intuiting.<sup>[10]</sup> Giorgi’s method of data analysis was utilized for analyzing and describing the data.<sup>[10]</sup>

### 2.2 Participants and setting

The sample included students from two required medical/surgical courses in a bachelor of science in nursing (BSN) program at a public university located in the southern United States. The medical surgical I and medical surgical II courses were conducted on the main university campus and at two different satellite campuses over two concurrent semesters. Students actively engaged in the courses were invited to participate in the study through focused group interviews. The researchers invited the students using email through the course learning management system. Interviews took place on all three satellite campuses.

A convenience sample of 18 students participated in the interviews. Of the 18 students, 15 were female (83.3%) and 3 were male (16.6%) with a mean age of 28.7 years.

### 2.3 Ethical considerations

Institutional Review Board (IRB) approval was obtained through the university and informed consent was obtained from all participants prior to the interview process. All interviews were conducted face-to face in private locations on the university campuses and were recorded. Participants were asked not to reveal any personal information and the interview sessions occurred over a 1-2 hour time frame.

### 2.4 Data collection

Three focus group interviews were conducted with the researchers guiding the discussion based on an interview guide. Interview questions consisted of information regarding the campus the student attended how the new teaching method compared to traditional lecture, challenges, benefits, support, learning styles, adaptation strategies, and overall experience. The focus groups were composed of students taking the medical surgical course from the main campus and two satellite campuses. Students shared their experiences as recipients of the new active learning strategy known as the flipped classroom. All of the focus group interviews were digitally recorded and transcribed verbatim.

## 2.5 Data analysis

Giorgi's approach to phenomenological data analysis assisted the researchers in data analysis.<sup>[10]</sup> The researchers used the following stages: (A) Initially, the entire set of interview transcripts were read to obtain a "sense of the whole" (p. 566); (B) Interview transcripts were read and re-read by two different researchers to obtain an overall feeling of the participants' experience. Transcript and survey data were analyzed by two experienced qualitative nurse researchers using a line-by-line approach to extract significant statements, and throughout the analysis process, the data was hand coded and intercoder agreement between the researchers was reached with a consistency of over 90%; (C) The significant statements were then explored in an effort to formulate meanings from the phenomena being investigated; Formulated meanings were sorted into categories and themes; (D) As themes emerged, further understanding of the students' experience of the "flipped classroom" became apparent resulting in an exhaustive description of the participants' experiences that can be found in the findings section.<sup>[10]</sup> Overall, the lived experience of the students participating in the "flipped classroom" resulted in feelings of frustration, disconnect, depersonalization, and additional time requirements which in turn, contributed to increased levels of anxiety and discomfort.

## 2.6 Integrity of the study

Data triangulation and investigator triangulation<sup>[10]</sup> were used to guide the study and provide indicators of truth and quality. Time, space, and person data triangulations were used to enhance the quality and validity of the study. Investigator triangulation was utilized to ensure consistent findings of the data.

- Time triangulation involved collecting data at different times of the day and at different times during the semester.
- Space triangulation included collecting data at multiple sites, including the main campus and two satellite campuses.
- Person triangulation consisted of collecting data from different levels of students from both the Med/Surg I class and the Med/Surg II class.
- Investigator triangulation incorporated collaboration between two nurse researchers making decisions related to data collection, coding, and analytic decisions.

## 3. FINDINGS

Four major themes from the interview and survey data emerged: (a) frustration, (b) disconnect, (c) depersonalization, and (d) time.

### 3.1 Frustration

Some students felt as if they were not able to ask a question because they were not in-class. "Sometimes even if you write your questions down, four days later you're like, 'What does that mean?' I know that this is the question, but I don't remember exactly what I was thinking when I wanted to ask the question." One student said she "hated" not being able to ask a question during the lecture.

Other problems related to the newness of the system. One student said,

"There is always hesitancy with change. The lack of knowledge of the professors about how things would work since it was a new system was very frustrating. Please do not work out the 'kinks' at the expense of my grades".

Another student commented, "... I think that they're doing so much to try to help us right now. And I know that everything they are doing is trying to help us." However, frustration prevailed.

### 3.2 Disconnect

Some students stated felt the use of lecture videos decreased faculty interaction making it harder to understand priority setting. One student summed up her feelings by stating:

"It was also more difficult to really focus on what part of the material was the most important. Those are things seasoned nurses should be able to help us divulge. It is much harder to know what is critical if you have never experienced the reality".

This feeling of disconnect was extenuated by a time delay in faculty responding to lecture questions asked through email. This delay in email response prompted one student to say, "If you didn't understand that first concept that you sent off the email for, then you might not understand the information that follows and then you're waiting for the email and then you listen to the rest of the lecture and then you continue to not understand the remainder of the lecture because you haven't had your answer clarified".

### 3.3 Depersonalization

The theme, depersonalization, was a common feeling students felt with the lecture videos. Student also talked about having different learning styles. "... but, this kind of makes it" [lecture videos], "you all learn the same way, and, here you go." They also stated that they benefit from discussions in a traditional lecture and that listening to other students' questions helped them learn and would often spark questions they had.

While students admitted that they were a "technological gen-

eration”, they identified themselves as a “technological generation who learned in the classroom.” As one student passionately stated:

We are a “technological generation who learned in the classroom. I mean, you also have to look at like when we started school; even elementary school... We didn’t have servers. We didn’t have computers. We didn’t have anything like, this is... we’re just learning as we go, too. I mean, we weren’t little 3-year-olds on the computer. I mean, we didn’t get a computer until I was probably in high school. And so, I mean, yeah, we’re technological but not to that extent.”

### 3.4 Time

Time management was one of the most commonly identified challenges by all of the students. As stated by one student, “In the past, I read the chapter and highlighted and took notes before I came to lecture, now I have to do that PLUS watch the video lecture which takes twice as long to listen to.” Another student added, “Getting all the information from the video lecture... you might miss a word and it changes the content if you don’t understand it.”

A slow Internet connection was reported by several of the students living in rural areas. The slowed connection affected students’ ability to download the lectures. Many of the students did not have the capability to do live-streams due to their computer’s limitations, stating “my laptop is really slow.” Additionally, students talked about the buffering (which occurs while the presentation is downloaded for viewing) of their computers, “I can’t live-stream because with my computer, it buffers constantly. It makes it a much longer process.”

Additionally, many students stated that the professor talked too fast, making note taking a challenge. They talked about how they had to keep starting and stopping the lectures to take notes. This in turn, increased the amount of time it took for students to listen to the lectures and take notes. If the lectures were recorded in a class from a previous semester, there were side conversations and technical difficulties that were not edited out. If the instructor recorded the lecture in an office, the rate of speech was fast and the tone was often monotone.

When students were asked to compare the new teaching method to previous learning experiences in the traditional classroom, students felt that watching the lecture videos and participating in the face to face simulation sessions increased their workload, stating, “... It’s like they are adding so much to it... Without taking anything away.” The students perceived the face-to-face activities as “doubling” their

workload. One student said a one hour lecture would take two hours to listen to and take notes. Having a poor quality recording and difficulty understanding the lecture required even more time.

## 4. DISCUSSION

### 4.1 Benefits

The majority of students enjoyed having the ability to view the lectures in a video format. The repetition, flexibility, and the ability to re-listen to the lectures were some of the benefits expressed by the students. These sentiments are in agreement with the professional literature pertaining to the flipped classroom environment.<sup>[1,3,6]</sup> Students said that they benefitted from hearing the lectures more than once, coupled with the fact that they could “stay in their p.j.’s (pajamas).” Others talked about the fact that they could “go at our own pace.” Several students mentioned that while they were listening to the video recording, the speed of the recording could be increased, thereby decreasing the total time needed to listen to the lecture. While others liked the feature of being able to slow down for a concept they needed to listen to again.

Further they stated that they could listen to the lecture for 30 minutes, then take a break, for example, “... you need to go run an errand, you need to fold a load of laundry, you know, you can do that. That was a benefit.” Moreover, “It was nice to be able to get other things done while listening to lecture, you know? If I’m driving home, I can listen to lecture.” Re-listening to the lectures was a common benefit that surfaced as a common thread.

In terms of student learning outcomes, one student explained about the non-traditional teaching/learning methods, “It helped me to become an independent learner.” This student said, “It was either work harder or fail. It definitely requires more self-discipline than previous online classes...” Additional benefits shared by the students focused on the face-to-face simulation activities. While all of the students did not benefit from the simulated activities, many stated that the case studies were helpful.

“... Because sometimes reading it doesn’t always [help], but if you can sit and look at a monitor and see, ‘Okay, here’s what’s going on. What are we going to do?’ And put it more into actions, rather than just reading it; then you kind of have all things: you had the visual person; you had the person that needs the interaction. I mean, it just kind of brings it more... it’s something that I can see in my head when I’m sitting taking a test, rather than just black and white words on a piece of paper.”

One student said incorporating the video lecture, reading the

textbook, and the kinesthetic methods used in the face to face simulations helped to reinforce the content. That student went on to say,

Breaking up into smaller groups during those class times offered a more intimate setting when our individual questions and concerns could be addressed, plus the instructors could pick up on any uneasiness about unit concepts and explained it better – to the point I felt I grasped the point better.

Other students agreed that reinforcement of ideas was a main benefit. Along with reinforcement, students that liked the new method said they felt like they had more control over the process, they could choose the time and place to study. Watching the lectures on video allowed students to “get ahead” in their preparation for exams and studying. Students liked the flexibility of having access to the lecture at any time and being able to work at their own pace.

#### 4.2 Challenges

Some of the students felt the Medical-Surgical courses had become online courses. Students stated in the past, they had a choice of taking online courses. Furthermore, “I always had the option of taking things online. I could take it in a class or I could take it online. And if I had the option, I never took it online. I always took it in the classroom”. In contrast, one of the students was not opposed to this online type of learning method.

Students also talked about financial challenges. Many had to pay more for high-speed Internet, or drive to the library to access the video recordings. One student commented, “If you are paying thousands of dollars a semester to be taught a high quality education, you deserve an instructor actively teaching and demonstrating situations to the class”.

In terms of the simulated classroom activities, the majority of students stated that they were beneficial and almost all of the students said the case studies were effective. However, the word search, crossword puzzles, and games were not considered to be helpful as students stated they could quickly look up the answers.

In exploring the lived experience of transitioning to a “flipped classroom” students’ perceptions were not what faculty expected to discover. Instead of seeing the experience as a “flipped classroom”, the majority of students felt they were participating in two different classes; the video lecture was one class and classroom time was another class. The literature also reports barriers to “flipping the classroom” which include students arriving to class unprepared,<sup>[3,6,7]</sup> the perception by students that watching the video lectures outside of class is still homework that takes away from family or

work time,<sup>[8]</sup> and the additional time and organizational skills that are associated with implementing the new “flipped” format.<sup>[3]</sup>

Using new technology can be an intimidating and challenging process for students. Some students felt the video lectures were impersonal and viewing the videos outside of class required additional time thereby agreeing with the literature.<sup>[3,8]</sup> This non-traditional approach to learning was different than what students were expecting. Students were accustomed to viewing slide presentations in class along with lecture notes provided by faculty. This passive method of learning, while comfortable for the student does not require a higher level of cognitive skill and affords no opportunity for application.

#### 5. SUMMARY

Students in the medical/surgical courses were expected to view pre-recorded lecture videos in preparation for classes, and in-class activities were conducted where they engaged in case study analysis, critical thinking activities, question and answer sessions, and discussions designed to make them think critically. These approaches were designed to make the Medical-Surgical content more engaging, meaningful, and, were used to promote active learning in an effort to stimulate clinical reasoning and help students “make connections” from theory to practice. Overall, students did not embrace this transformative teaching strategy and responded with increased levels of anxiety and discomfort to the change in teaching format. Another contributing factor to the negative by the students was the lack of preparation and the lack of choice in participating in the new teaching method.

The flipped classroom can enhance the learning experiences of nursing students in Medical/Surgical courses; however, there are challenges related to this transformative process. Students must convert from passive learning to active learning by becoming more autonomous and independent. Using new technology can be an intimidating and challenging process for students and faculty and much effort is needed to alleviate frustration.<sup>[4]</sup>

The days of power point lectures delivered by monotone voices are not meeting the learning needs of today’s students. Faculty must bring the power of clinical experiences into the classroom so students can learn how to prioritize care.<sup>[4]</sup> Although the process of recording and incorporating video lectures requires additional time, replacing classroom time with active learning experiences is one way to help students’ apply information and develop clinical reasoning skill.

Benner and colleagues<sup>[4]</sup> caution nurse educators to be diligent in their assessment of their pedagogies and curricula.

Implementing curricular changes that challenge traditional methods of instructional delivery can help students better understand what a nurse is and what a nurse does through an enriching educational experience. Faculty as facilitators of students' learning, facilitate the learning process by helping students relate didactic content to clinical.

#### Limitations and recommendations for future research

One limitation was that the sample size in this study was small and therefore may not be a representative distribution of the population. Inaccuracies from self-reported data may occur due to the subjective nature of the individual's interpretation or recall bias. The Giorgi method aided the researchers in bracketing any preconceived assumptions so it would not influence the outcome.

Recommendations included faculty support. Non-traditional methods of teaching/learning, such as "flipping the classroom" may enhance the traditional approach to learning;

however, faculty needs to understand how to incorporate this new modality into their pedagogy and curricula to maximize their instructional delivery. Based on this premise, the following recommendations are suggested.

- Transparency is very important; the delivery of instruction and the approach must be transparent. Change can be challenging for both faculty and students; therefore, respect and trust is needed in an effort to foster a transformative learning environment. Equally important is the learners' needs; the student must be the core focus.
- All stakeholders (*e.g.*, faculty, students, administrators) must collaborate and work together to anticipate the potential advantages and disadvantages of employing a novel teaching methodology to ensure optimal learning.

#### CONFLICTS OF INTEREST DISCLOSURE

The authors declare that there is no conflict of interest statement.

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