

College students' perception of the flipped classroom: A phenomenographical study

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Abstract:

The 'flipped classroom' has become popular among educators; however, research on the topic has been relatively sparse, especially in terms of qualitative research. Therefore, the purpose of this study was to explore student perceptions of the flipped classroom. Undergraduate students who enrolled in a flipped public health course were invited to participate in the study. Thirteen students participated in semi-structured interviews to discuss their thoughts and experiences regarding the flipped classroom. Students viewed the flipped classroom according to out-of-class and in-class activities. Students felt that out-of-class activities were convenient, accommodated different learning styles, and were important for being prepared for class time. In terms of in-class activities, students enjoyed interactive activities (e.g., hands-on activities, class discussions), but some viewed the activities as anxiety provoking. Students also viewed in-class activities as useful for building student-instructor rapport. Implications for practice and future research are discussed.

Keywords: flipped | inverted | classroom | college | university | higher education | interactive | rapport | WNQ

Article:

1 Introduction

Although the 'flipped classroom' has become a recent buzzword among educators, its general concept was introduced over a decade ago. In 2000, both Baker and Lage and colleagues described a different model of teaching that utilised technology in order to 'flip' how traditional in-class and out-of-class activities were completed by students. Specifically, typical in-class activities (e.g., lectures, note-taking) were completed by students outside of class time. This was made possible by the use of computer technology, allowing students to watch pre-recorded lectures outside of class. Doing so allowed the instructors to have more class time for helping students complete activities usually performed out of class (e.g., homework) (Baker, 2000; Lage et al., 2000).

The flipped classroom was later popularised by the 'Khan Academy' and two high school chemistry teachers. In 2004, Salman Khan began posting instructional math videos online in

order to tutor his younger cousin who lived in Louisiana, while he lived in Massachusetts. Since Khan's videos were posted online, people from around the world also watched the videos. The success of the videos inspired Khan to create the Khan Academy, a website containing thousands of instructional video lectures that could be used by teachers in place of lectures (Khan, 2012). In a similar story, Jonathan Bergmann and Aaron Sams, high school chemistry teachers from Colorado, began posting video lectures online in 2007 for students who were absent from class. Students and teachers from across the country started watching the videos. The videos inspired Bergmann and Sams (2012) to have students watch lectures out of class in order to use class time helping students apply course content.

Even though the flipped classroom has grown in popularity, there have been relatively few research studies on it, especially in terms of qualitative research. As such, experts have suggested that more studies be conducted in order to understand the strengths and limitations of the flipped classroom (Bishop and Verleger, 2013; Hamdan et al., 2013). Thus far, nearly all research on this topic has been quantitative in nature, measuring differences in performance and attitudes between students in flipped and traditional classroom settings (Bishop and Verleger, 2013). For instance, Day and Foley (2006) studied the impact of a flipped course on students enrolled in two sections of a computer interaction course. One of the sections was flipped (e.g., online lectures outside of class, learning activities in class) and the other was structured as a traditional classroom. Those in the flipped section had significantly better grades on homework, exams, and a course project.

In terms of qualitative research, most studies have consisted of mixed method research, in which a few open-ended items were included on a survey to give students an option to write about their perceptions of the flipped classroom (Butt, 2014; Cardettie et al., 2013; Dove, 2013). Other mixed method studies used end-of-course student evaluations as a way of collecting qualitative responses regarding the flipped classroom (McLaughlin et al., 2013; Wilson, 2013). For instance, Dove (2013) included the following open ended items in his survey: 'What did you like most about this class? What did you like least about this class?' Although Dove gathered a wide range of responses regarding the flipped classroom, the responses did not seem to be more than one or two sentences in length.

Although open-ended survey items in mixed method research may have discovered a basic understanding students' thoughts about the flipped classroom, these survey items were limited in that researchers were unable to probe students in discussing opinions and experiences with greater depth. Therefore, the purpose of this paper was to conduct a thorough, qualitative investigation to answer the following research question: How do students perceive their experience with the flipped classroom?

2 Methods

2.1 Description of course

The study was based on a general education course titled 'Drugs and Society' that enrolled undergraduate students from various class standings and majors of study. The course was offered during the Fall semester of 2013 at Montana State University. Over 90 students enrolled in the

course. Most of the students majored in health-related disciplines (e.g., kinesiology, community health education, physical education) and nearly all of the students were in their first or second year of college. Throughout the semester, the course covered a wide range of topics, including individual/social implications of psychoactive drug use, basic pharmaceutical concepts, legal issues regarding substances, common pharmaceutical preparations, and issues relating to over-the-counter products.

Figure 1. Sample WNQ

| | | | |
|--|---------------------|--------------------------|---------------------|
| Name: | | WNQ: social norms theory | |
| Watch the following video on the social norms theory: http://youtu.be/jTTcsApkvmQ | | | |
| Answer the following questions as a way of taking notes about the video you watched: | | | |
| 1 What percent of college students in the nation do you think: | | | |
| Type of drug use | Your guess % | Average guess % | The actual % |
| Never drank alcohol in their life | % | % | % |
| Drank alcohol 30 out of the last 30 days | % | % | % |
| Never smoked a cigarette in their life (never even took a single puff) | % | % | % |
| Currently smoke cigarettes (smoked at least once out of the past 30 days) | % | % | % |
| Smoked cigarettes 30 out of the last 30 days | % | % | % |
| Never smoked hookah (never even took a single puff) | % | % | % |
| Currently smoke hookah (smoked at least once out of the last 30 days) | % | % | % |
| Smoked hookah 30 out of the last 30 days | % | % | % |
| Never smoked marijuana in their life (never even took a single puff) | % | % | % |
| Currently smoke marijuana (smoked at least once out of the last 30 days) | % | % | % |
| Smoked marijuana 30 out of the last 30 days | % | % | % |
| Were your guesses close or inaccurate? Describe your first reaction when comparing your guesses to the actual %s. | | | |
| 2 Describe each key aspect of the social norms theory. Give an example of each: Overestimate problem behaviours: Underestimate healthy behaviours: Misperception: Reference group: Descriptive misperceptions/norms: Injunctive misperceptions/norms: Influence of perception on behaviour: Carrier: | | | |
| 3 List and describe the 2 different causes of misperceptions shown in the video: a b | | | |
| 4 What are social norms campaigns? | | | |
| Questions Write at least 1 question that you have about social norms theory: | | | |

The course was flipped by requiring students to complete traditional in-class activities (e.g., lectures, note-taking) outside of the classroom setting. These traditional activities were

consolidated into a single worksheet that was called a WNQ, which stood for: *W*atch a lecture, *t*ake *N*otes, and ask a *Q*uestion (Figure 1). Each WNQ, pronounced ‘wink’, contained a hyperlink that would direct students to a video lecture located on YouTube. The WNQs also included structured prompts that guided student note-taking and formation of questions. It should be noted that each lecture was recorded audibly and then used to create a brief (less than 10 minutes long) cartoon-based animation of the lecture’s content, which was made via the website <http://www.powtoon.com>. Also, it is important to note that the WNQs were derived from the ‘WSQ’, an acronym that stands for Watch, Summarise, and Question, developed by Mrs. Kirch, a high school math teacher in California (Kirch, 2013).

The course was also flipped by using class time to promote students’ higher level thinking. At the start of every class, questions regarding the lecture were addressed and then student learning was assessed through a brief quiz. For the remainder of class, students would work in small and large groups to complete activities that specifically addressed components of Bloom’s higher levels of cognitive function, including application, analysis, synthesis, and evaluation (Bloom, 1956). The majority of class activities were in the form of small and large group discussions, debates, and peripatetic walk-and-talks, in which students completed discussions while walking around campus. When applicable, class activities also consisted of out-of-seat, hands-on activities related to course material, including interpretive dances, campus ‘flashmobs’, dramatic skits, dissection of cigarettes, and application of the ‘Bacchus Manoeuvre’, a manoeuvre designed for placing an unconscious, intoxicated person into a recovery position to prevent them from choking on vomit.

2.2 Phenomenography

Phenomenography is a method of qualitative research used to investigate the different ways people experience or think about an observable occurrence (Marton, 1986). Whereas the more familiar method of phenomenology is directed at investigating the phenomena, phenomenography explores how people view or understand the phenomena (Larsson and Halmstro, 2007). Phenomenography was developed in Sweden in the late 1960s to explore the learning experiences of students (Ashworth and Lucass, 2000), and therefore was deemed the most appropriate method to investigate the research questions of this study.

2.3 Bracketing

During phenomenographical research, it is recommended that researchers ‘bracket’ presuppositions to ensure that results communicate the ways in which the phenomenon appears to participants, instead of how it is perceived by the researcher (Tufford and Newman, 2012). It is recommended that researchers bracket previous research findings, theoretical structures, personal knowledge and beliefs, and prior experiences (Ashworth and Lucas, 2000). Therefore, prior to conducting this research study, the lead author discussed his thoughts and emotions with the second author regarding the flipped classroom in order to identify his personal biases. The major bias that emerged from the discussions was that the lead author enjoyed using the flipped classroom throughout the semester and was hopeful that the students would feel likewise. To address this bias, the participants were explicitly encouraged during recruitment and data collection to share both positive and negative perceptions of the flipped classroom. Additionally,

data analysis was conducted collaboratively in order to reduce the likelihood that this particular bias would impact the study's results.

2.4 Recruitment

Students were invited to participate in the study during the last week of the semester before the scheduled final exam. Prior to recruitment, the researchers obtained approval from the university's Institutional Review Board to conduct the study. Students were offered a \$20 gift card to the university's bookstore to participate in the study. Researchers emphasised during recruitment that choosing to participate or not participate in the study would neither improve nor harm course grades.

2.5 Interviews

The semi-structured individual interview is the preferred method of data collection used during phenomenographical research (Ornek, 2008), and the goal is to establish a conversational partnership in which the participant is given maximum opportunity to react (Ashworth and Lucass, 2000). Interview questions used by Ornek (2006) to investigate the thoughts, experiences, beliefs, and feelings of students about a physics course were adopted for use in this research study. In particular, students were asked, "Before you started this course, what did you expect the flipped course to be like?" and "Now that the course is almost finished, what do you feel about the flipped course?"

Students were interviewed one-on-one by the lead author. Interviews ranged in length from 15 to 20 minutes. Each interview was recorded digitally and transcribed verbatim. The lead author felt that saturation (e.g., when unique themes no longer emerge from data and when enough data was gathered to build a logical explanation of the findings) (Glaser and Strauss, 1967; Morse, 1995; Strauss and Corbin, 1998), was reached after the 13th interview.

2.6 Analysis

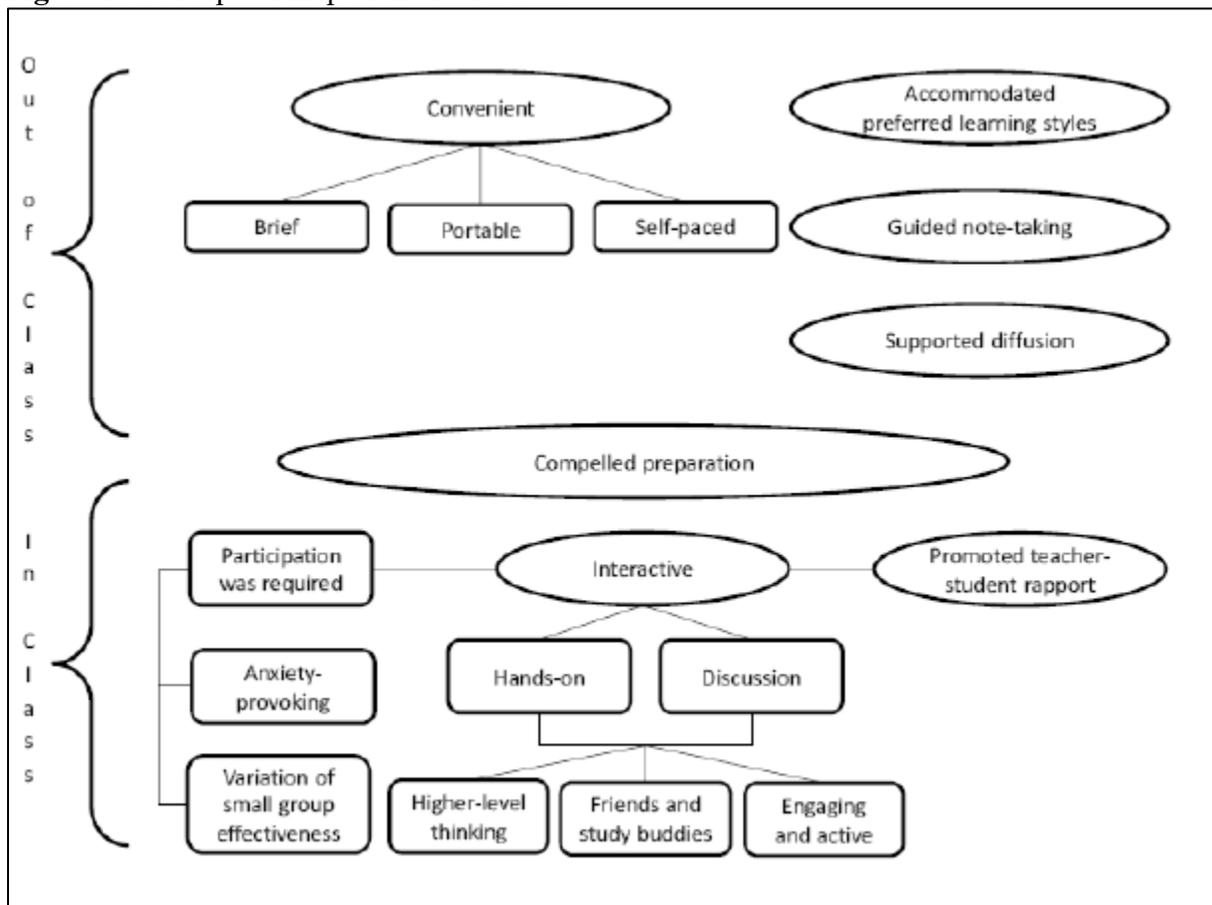
During and after data collection, researchers immersed themselves in the data in order to analyse the transcript for major themes. During interviews, field notes were organised to denote both the referential and structural aspects of responses (Larsson and Holmström, 2007). In other words, the interviewer sought to make note of what students said about the flipped classroom as well as how they talked about the flipped classroom. After interviewing students, researchers used constant comparative analysis to conduct open coding, categorising the data into major patterns, or themes (Glaser, 1978, 1992). Afterwards, the researchers used axial coding (Strauss and Corbin, 1990) to analyse how the major themes were related based on the principles of the flipped classroom and how the students interacted with their classmates and with course content.

Member checking was conducted in order to improve the accuracy of the research findings (Lincoln and Guba, 1985). Specifically, students who participated in the study were invited to read the manuscript's results section in order to determine if the analysis reflected the students' experience with the flipped classroom. The findings were updated based from student feedback regarding what information may have been missing or misinterpreted from the analysis.

3 Results

Students expressed their perceptions regarding both out-of-class and in-class aspects of the flipped classroom (see Figure 2). Students had various thoughts about their experience out of class that came from completing the WNQs.

Figure 2. Conceptual map of interview data



3.1 Outside of class

3.1.1 The flipped classroom was convenient

Brief. Several students noted that the video lectures were convenient to their lifestyles. During the interviews, students discussed that extenuating life circumstances, such as school work, part-time jobs, family responsibilities, and social interests, kept them extremely busy. As such, students expressed their appreciation of videos that were short in length, allowing students to be totally prepared for class by taking a short amount of time from their busy lives to watch a video. One student stated that, “I liked how short they [the videos] were. I liked how they didn’t take up an hour, they were just a few minutes. I have work and stuff and it’s hard to have extra time, but watching the videos was no problem...I spend so much time reading textbooks that it takes me

longer to read a chapter than it does to watch a video. Also, most of the videos are really short, so if I needed to re-watch a video I could and still get all the information”.

Portable. Also, students valued the portability of the video lectures. They liked being able to watch the videos when and where they wanted. One student stated that, “...so watching the videos on my own time, and I would just watch them in my room, and it was cool to just relax and still be doing my homework”.

Self-paced. Moreover, students liked the opportunity for self-pacing, having the ability to pause and rewind the video lectures. A few students noted that in traditional classroom settings, they felt embarrassed to interrupt a lecture to request that a professor repeat themselves. On the other hand, students liked how the flipped classroom allowed them to easily pause or rewind the video to understand a concept that they may have misunderstood or missed during the first time they watched the video. For example, one student said, “I could pause it if I want to and go back. If there was something that I didn’t catch right off, I wouldn’t have to raise my hand and stop a whole class, I could just rewind it”.

3.1.2 The flipped classroom accommodated preferred learning styles

Several students noted that out-of-class activities (e.g., video lectures and WNQs) accommodated their varied learning styles. Specifically, students felt that their learning was enhanced by the visual and audio components of out-of-class tasks. For instance, a student expressed, “My experience is that I would type the WNQs. Typing it, hearing it, watching it, the combination of it all really connected with me”. Similarly, another student said, “The act of listening, watching, and typing out the information from the videos helped me remember the information better”. “I’m a very visual learner...so, just filling out the WNQ and watching and listening to the videos really helped me”.

3.1.3 The flipped classroom guided note-taking

Several students reported that guided note-taking required by the WNQs enhanced their learning. Students benefited from how the WNQs clarified which concepts and principles were most important and likely to be assessed. One student mentioned, “I liked that they [the WNQs] were a roadmap. Knowing that that’s what you wanted us to get from the unit. You knew what you were looking for”. Another student said, “If I go to a lecture, I don’t read the night before, because they are just going to lecture the information to me in class. So, I think it’s good with the WNQs because we know what you want us to know”.

3.1.4 The flipped classroom supported diffusion

Several students noted that others who were not enrolled in the course had watched the video lectures. Non-students watched the videos due to either peer-pressure of enrolled students or due to happenstance. For example, one student felt the need to share a video lecture about the health effects of marijuana with her boyfriend’s roommates. The student stated that, “And I would share the material with my friends, well, my boyfriend’s roommates. I would make them watch the

videos because they smoke weed. And I made them watch it so they know what it [marijuana] was doing to them”.

In another instance, an older non-traditional student was watching a video lecture in her kitchen when her son walked past. The son asked what the video was about and started watching. The video was about the Bacchus Maneuver, a method of positioning an intoxicated person on their side to prevent death by choking on vomit. The participant stated that “I watched the videos at home and my 12 year old would watch it with me and ask questions. So I’d be watching a video and he would come in the kitchen to get some food and stop by the computer and listen to what I was watching. He would ask questions about different drug effects and how addiction works. I taught him how to do the Bacchus Maneuver. He showed his friends at school, so they were at their middle school cafeteria practicing on each other”.

3.1.5 The flipped classroom compelled preparation outside of class

Being prepared for in-class activities acted as a gateway between the out-of-class and in-class components of the flipped classroom. Although being prepared for class took place outside-of-class (e.g., watching video lectures, completing WNQs), students felt that being in a state of preparation was essential for participating during class. Two key subcategories were related to being prepared: not watching videos due to choice and due to the instructor not posting the videos online at an early time.

Not watching videos. Several students noted that being prepared by watching the video lectures was essential for succeeding on quizzes and contributing in-class activities. Students observed others who did not watch the videos felt tempted to cheat on quizzes. One student said, “I had a friend who didn’t watch any of the videos. He would annoy me because he didn’t watch them and he would try and get me to help him during the quiz. He would kick me to get an answer. I think for the most part, the majority of the people I was around would watch them. I think the students who didn’t watch the videos would tend to miss questions on the quizzes. There would be girls in front of me and they would say when they got to class that they hadn’t watched the video and I could tell that they would look around during the quiz to see what the answers were to cheat”.

Students also confessed to not watching videos themselves. Those who did not watch the videos felt unprepared to participate in small group discussion. One student exclaimed, “I actually went to class three times without watching the videos. It was really difficult, well, sometimes it was difficult, and other times it wasn’t. Sometimes I would straight-up get lost because we would jump right in to applying what we learned and I’d have to have someone explain it to me. So, I would either get lost and have to sit back in the group and let someone else lead. So, I would either get lost in it or I would either learn it”. Likewise, another student observed others’ quality of participation when unprepared, “I think another reason that people didn’t want to participate was because people weren’t prepared when they came to class. They didn’t necessarily watch the videos, so if you’re not prepared you’re not going to have anything to say in group discussions”.

Videos posted early. Students also described that a key factor in being prepared for class was having video lectures posted online days before the subsequent class. Several times during the

semester, the instructor had difficulty in taking time to create and post videos several days in advance to the videos' respective class time. One student said, "My only recommendation is that you post the video sooner than the night before, because I heard that some students struggled with not getting the video sooner because some worked late at night and can only do their homework before work, and some didn't have the Internet at home, and some live 30 minutes away, so they weren't able to watch the video before class".

3.2 In class

3.2.1 The flipped classroom promoted teacher-student rapport

Students also appreciated that the flipped classroom gave the professor and students an opportunity to get to know each other. One student said, "I liked how flipping it gave you time to talk with us in class. You learned most of our names. I've been in college for 3 years and, like, only 3 professors know my name. I mean, c'mon. When professors know my name, it gives a sense of guilt if I don't show up to class and its half-and-half the other side, too, where you like that your professor knows your name, that you're an important part of the class". Another student appreciated that the video lectures were created by the professor. The student felt that since the videos featured the professor, the professor was invested in the class and did not take the easy way out by searching the internet for online videos that may have been informational, but were created by other people. The student said, "I also liked that you made the videos, because I think some people think with a flipped classroom that you go watch some other person talk about this, but it was you and your opinions and that was really helpful".

3.2.2 The flipped classroom was interactive

Hands-on. During interviews, several students mentioned that they appreciated how the flipped classroom provided time during class for the students to engage and learn class material in a physical, hands-on manner. One student noted that, "It [the flipped classroom] was different from a normal lecture, we got to get involved, physically, with what we were learning".

Discussion. Similarly, students explained that they enjoyed engaging with classmates in small- and large-group discussion, which was made possible by the structure of flipped classroom. By watching video lectures outside of class, students were able to spend more time in class discussing course content with their classmates. During interviews, students spoke about group discussion and its impact on their learning. One student mentioned, "I learn by sitting and talking about the material, so I think that it was very beneficial to me to hear other people, like, discussing things and discussing what they were trying to remember. And so the actual discussions of the material helped me a lot. Also, just arguing with people about answers. Because we were all explaining what we thought of an answer".

Higher-level thinking. Several students mentioned that they enjoyed how the flipped classroom provided ample room during class for engaging in higher-level thinking. One student said, "I totally wasn't expecting us to be creative during class. I thought that we were just going to learn the course material and that we would learn strictly scientific stuff and not do creative things...I

also liked the scenarios that you would ask for group discussions, because I would have never thought of those things before. They were things I'd never thought about”.

Friends and study buddies. Students also felt that the flipped classroom helped them to establish new friendships and acquaintanceships. In particular, students thought that the use of activities during class time facilitated discussion among students and led to the development of social bonds. A few students felt that building relationships with their classmates helped them to learn course content. One participant stated, “I liked that we had small groups because it helped me to know more people. Me and two others are now best friends. It started in class, and now we are best friends. We hang outside of class and study a lot, because we have some classes together. There’s a bunch of others in class that I say hi to on campus. It’s nice, in a social way”. Another student mentioned how she formed ‘study buddies’ in the flipped classroom for her other courses, “I think you met more people in the [flipped] class than you generally would. You have no reason to talk to every single person in class, but if you’re forced to talk to them, then you meet a lot more people that way. I found out in your class that there are three other girls who are in my other big lecture halls. So now we are working on a big paper for that class together”.

Engaged and active. A few students mentioned that the flipped classroom was engaging and prevented them from participating in non-class related activities, such as surfing the internet, doodling, texting, working on homework for other courses, or logging on to Facebook. For example, one student stated that, “...in a lecture, I have a hard time even just listening half the time, I can’t write fast enough, so I have to type on my computer instead, and then I’m like, ‘Oh, let’s go on Facebook between lecture slides.’ But, we didn’t have a chance to do that in your class. We were actually doing stuff, more, talking in a group or doing skits and not sitting in class trying to type up notes...I think it just gave us a great opportunity to stay focused”. Another student noted, “It’s much more enjoyable to go to class. In every lecture class, I’m always on my laptop not paying attention. But, in your class, I never bring my laptop. The class is so engaging, I’m not just going to sit there and watch the time go by, as compared to a lecture class”.

3.2.3 The flipped classroom compelled participation in class

Due to the participatory nature of the flipped classroom, students discussed during interviews that the participatory nature of the flipped classroom provoked anxiety and unwillingness to engage with class discussions and activities.

Anxiety-provoking. A few students noted that they felt anxious because of the flipped classroom’s expectations regarding participation. One student stated that interacting with classmates in small and large groups made her feel uncomfortable. She noted that, “Something I didn’t like about class time was that we were almost required to get up and participate. I have serious anxiety problems, so sometimes I feel like participating made me really anxious”. During interviews, another student mentioned that she observed a hesitancy to participate with class activities among students in their first and second year of college. She said that, “I think it’s a comfort matter, especially where there’s freshmen and sophomores, students who are fresh to college they’re not going to be as comfortable because they haven’t spent years getting used to expectations of college classes”. Another student felt that others were uncomfortable to participate during class because of not being used to a flipped classroom. The student said,

“Some students come to class and they are expecting a lecture and they are expecting the teacher to do everything. But then, when you ask the roles to be reversed, I think it makes people uncomfortable, so I think that was a big portion of why some people didn’t want to engage in the class”.

Variation of small group effectiveness. Similar to provoking anxiety, student felt that active participation required by the flipped classroom made some students perform poorly within small groups. For instance, one student said, “I have a really big negative that I hated throughout the class, and that was the people that didn’t seem to learn that way would bother me because they would be ‘over it’ the entire time. And I feel that the reason they didn’t like it [the flipped classroom] and that they didn’t get it was that, like, when we were doing in-class activities I felt that they had a different attitude about it and it was harder to get them motivated. So, if you got into a group who was into it, it would be like an okay conversation. But, if you got with a group who didn’t really learn that way, they wouldn’t be into it”.

4 Discussion

The purpose of this qualitative study was to investigate the different ways that students perceive the flipped classroom. To the authors’ knowledge, this was the first study on the flipped classroom that solely used qualitative methods in order to research students’ perspectives of the up-and-coming method for teaching and learning. The study’s methods revealed several key findings that could guide future practice and research.

Findings from the study suggested that students viewed the flipped classroom as encompassing two distinct components: out-of-class and in-class activities. This finding was not surprising, since the flipped classroom’s structure emphasises out-of-class activities in order to be prepared for in-class activities. However, this finding was noteworthy. Past research has suggested that a large portion of college students often neglect out-of-class activities associated with traditional classroom (e.g., reading textbooks) (Burchfield and Sappinton, 2000; Clump et al., 2004; McDougall and Cordiero, 1993). Students have often felt that material taught during class has more importance than what was assigned for students to learn out of class (Sikorski et al., 2002). Within the flipped classroom, on the other hand, it was apparent that students valued completing out-of-class activities in order to achieve success during in-class activities.

Moreover, within the study it seemed that, in anecdotal terms, most students completed out-of-class activities. The authors believed that the flipped classroom may have shifted students’ consciousness of the dual, interconnected components of not only the flipped classroom, but college classes in general.

An interesting finding from the study was that students reported developing long lasting friendships and academic partnerships from the flipped classroom. Even though the formation of peer networks is not an isolated phenomenon to flipped classrooms, it was the structure of the flipped classroom’s in-class, participatory activities that created a platform for students to communicate with each other and build social bonds. Based from this finding, instructors who want their students to develop working partnerships may want to consider using a flipped

classroom model of teaching or may want to modify their courses to increase the amount of time that students interact with each other.

Another interesting finding from the study was how the flipped classroom supported the diffusion of lessons to non-students. From the interviews, and also from anecdotal evidence throughout the semester, students reported that non-students enjoyed watching the video lectures and learning content. This finding corroborates what has been reported by instructors from other flipped classrooms, such as Bergmann and Sams (2012), in which non-students have engaged with course material. Observing non-students watch the videos, or hearing about the phenomenon, gave students enrolled in the flipped classroom a sense of excitement that course content was popular among people who were not required to view the material as part of a course grade. It was encouraging that non-students would take time to engage and learn from the course. By the end of the semester, it became apparent that flipped classrooms with accessible online videos could benefit the public in general by increasing others' knowledge within particular academic disciplines.

4.1 Implications for practice

Students reported that advanced preparation was essential for succeeding within in-class activities; however, students also reported non-compliance with watching videos and completing WNQs. As such, those considering the use of a flipped classroom model of teaching should be aware that students may be non-compliant with out-of-class activities. At the same time, the study's interviews indicate that the social obligations of coming to class prepared encountered during small group activities may inherently motivate students to come to class having completed out-of-class activities.

An additional finding from the study with direct implications for practice was student expectations of having a video lecture posted online well before class time. By not posting the video lectures early enough, students may not be able to watch the video and complete other out-of-class activities. Those considering the use of the flipped classroom, as compared to traditional lectures, should be aware that prepping, creating, and posting video lectures may require a considerable amount of time.

Instructors who want to implement the flipped classroom should also consider that the participatory nature of the flipped classroom may provoke anxiety in students. As a result, instructors should investigate and implement in-class activities that tend to make students feel less anxious and thus more willing to interact with their classmates. Logically, participating in small group discussions and interactive activities are naturally uncomfortable; however, there may be tactics not explored in this paper that could make these activities less intimidating to shy students.

4.2 Implications for future research

The findings from this study also have implications for future research. First, researchers interested in studying the flipped classroom should replicate the study described in this article. More studies should be conducted to determine if the themes that emerged from this study

accurately reflect student perception of the flipped classroom. By gaining a more complete of student perceptions, instructors can develop and fine-tune the flipped classroom to be more effective and more meaningful for students.

Second, future research should further explore how the flipped classroom impacts student-instructor rapport. Even though this study provides preliminary evidence that the flipped classroom promotes student-instructor rapport, future quantitative research should compare the statistical differences in levels of rapport within traditional versus flipped classrooms. Given previously established research regarding rapport and learning (Benson et al., 2005; Granitz et al., 2009), understanding how flipped classrooms affect rapport could provide insight on how classrooms could be modified to improve student-instructor relationships.

4.3 Limitations

This study's findings should be read in light of the methodological limitations of the study described in this paper. Since the participants from this study were recruited from a non-random sample from one course within a single university, the findings from this study may not be generalisable to other student populations. Moreover, the small sample size may yield an inaccurate representation of student perceptions of the flipped classroom; however, the authors believe that saturation of themes was reached after the last interview.

5 Conclusions

In summary, student perceptions of the flipped classroom indicate that this instructional strategy may increase the value of completing assigned tasks, enhance participation during both out-of-class and in-class activities, promote the development of academic partnerships, and supported the diffusion of lessons learned. If future studies confirm that the experience of students reported in this paper are representative of how students perceive the phenomena rather than a specific flipped classroom, educators ought to consider flipping their classrooms and restructuring the classroom learning environment so that students are inherently motivated to learn.

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