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# Flipped Classrooms and Student Achievement

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**Flipped Classrooms and  
Student Achievement**

by

Korrie Zupon

A Starred Paper

Submitted to the Graduate Faculty of

St. Cloud State University

in Partial Fulfillment of the Requirements

for the Degree of

Master of Science

in Information Media

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## Chapter 1: Introduction

### Introduction

Educators have been teaching students for hundreds of years. Different teaching models and methods are introduced and used for periods of time with the direct/explicit method of teaching being the main model used in classrooms. Rupley, Blair, & Nichols (2009) describe this method as one where the teacher is leading the classroom “through meaningful teacher–student interactions and teacher guidance of student learning” (p. 126). With the changing needs of students in the 21<sup>st</sup> century, the teaching/learning models should be different because students and teachers today are different. Flipped classroom methods which focus on the student and not the teacher have been introduced as one way to facilitate the 21<sup>st</sup> century learner.

A newer model of teaching is one that is student-centered and student-driven with teachers being the guide. This means that “the students are actively engaged in higher-order tasks and taking charge of their own learning” (Kim, Kim, Khera, and Getman, 2014, p. 37). Bergmann and Sams (2014) do not believe that this teaching method is new; rather, it is an improved model that incorporates newer technologies into the old method, providing a strategy that could not be done before. In the flipped classroom model, students are to listen or watch the primary lesson at home, then when they get to school, the teacher is their guide in doing what is normally considered “homework” (Flip Learning, 2014). Educators are optimistic about the model and anticipate improved test scores, improved retention of knowledge, and greater student achievement (Flumerfelt & Green, 2013).



**Statement of Purpose**

The purpose of this paper is to investigate the flipped model of learning and to understand its positive and negative attributes. With educators believing that the flipped model has the potential to increase student achievement, it is important to begin to gather evidence about the effectiveness of this model. To accomplish this, the second chapter of this paper will review the literature on the flipped learning method, the characteristics of the learning model, the procedures of model, student achievement, and the gaps in research about the model. The methodology chosen will be a survey of teachers currently using the flipped classroom model in the author's school will be outline in chapter three. The knowledge gained will help to determine if the flipped model of learning should be one that is more widely incorporated in the author's school.

**Problem Statement**

The flipped classroom model is gaining popularity as more teachers promote and introduce the method within their classrooms. Yet, there are many misconceptions about the model that includes but is not limited to: the belief that students are sent home to watch video; that flipped classrooms are just about personalizing the learning to the student; and that every flipped classroom looks the same (Shaffer, 2015). There is also an issue with determining if there is a relationship between the use of the flipped classroom model and an increase in student achievement. This teaching model needs further research in order to understand if it helps educators promote student achievement.

Because the flipped classroom model is relatively new, guidance is needed to help educators establish it into their classrooms. This is one of the areas of problem that educators

encounter. There is not a lot of instruction or information available on how to properly flip a classroom to help promote student achievement, and of the information found, much of it seems inconsistent. Given the different versions of the model, educators may be at a loss on how to actually flip their class and have successful outcomes by doing so.

There are also those who argue the validity of the model and how well it actually works. Teachers may take the position that there is no reason to change the way of teaching if there are no significant advances in student achievement with a different model. There are few studies currently available to show if there is an improvement in student achievement as a direct result of the different teaching model.

Other concerns include questions over what to send the students home to watch and/or study to prepare them for class, as well as concerns about students who do not have access to the appropriate technology at home. If these technology deprived students are placed in a flipped classroom environment but are unable to view the needed materials to prepare for class, their achievement will fall drastically behind the others that do have access.

With evidence on the effectiveness of the flipped classroom model being relatively scarce, the purpose of this paper is to add to the evidence available on the flipped learning model. The study will focus on the following research questions:

1. Is there any evidence that the flipped class has an impact on student achievement?
2. Is there any evidence that the flipped class has an impact on student engagement?
3. Is technology (i.e. iPads, Chromebooks, mobile devices, etc.) needed both at home and in the classroom to make this model work?

4. How does student access to technology outside of the classroom impact the flipped model inside the classroom?

### **Significance of Study**

The way educators teach is important not only to the students, but also to how educators remain relevant to the field in the 21<sup>st</sup> century. Some educators may be hesitant about new teaching methods when there is little information on it or the information they receive is not consistent. With the increasing popularity of the flipped classroom method, it is important to gather as much information as possible about how the model is being used and also if the educators using the model notice a difference in student achievement. It is important to know what tools best help in flipped learning, and if access to technology at home is a key component of the flipped model. The scope of this study is to research this newer trend in teaching and learning, and to determine the benefits of incorporating it into more classrooms in the school.

### **Definition of Terms**

**Direct/explicit method.** “Teachers directly and explicitly teach students what they need to know” (Rupley, Blair, & Nichols, 2009).

**Flipped class 101.** Bergmann and Sams (2014) refer to this as: having students watch instructional videos at home and then come to class prepared to do what otherwise would be done as homework.

**Flipped learning.** A teaching approach which shifts learning from a group space to an individual space and “the resulting group space is transformed into a dynamic, interactive,

learning environment where the educator guides students as they apply concepts and engage creatively in the subject matter” (Flip Learning, 2014).

**Problem-based learning.** Another name for flipped classrooms and/or flipped learning (Strobel & van Barneveld, 2009).

**Student achievement.** How much material a student learns in a specified amount of time (Carter, 2016). Each grade level has a certain amount of standards they need their students to learn in the time that they have them; the teachers must ensure that their students understand the material and can show that they understand the material in order for student achievement to occur.

**Social constructivism.** A learning theory that is based on how the students learn. In this theory, the teacher is the facilitator of knowledge and the learners take on more tasks and are more active than passive in their learning (Green, 2015).

**Student-centered.** Patrick (2015) states that a student-centered environment is one that “empowers students with voice and choice in how they learn, showing work on what they have learned and providing powerful, personalized learning experiences” (p.2).

**Team-based learning.** Balan, Clark, and Restall (2015), state that this term will be used as a synonym for flipped learning, requiring “students to learn course materials before a class session” (p. 639).

**Technology.** For the purpose of this paper, technology will be defined as iPads, Chromebooks, Mobile devices, Internet, and personal computers.

**Traditional learning approach.** “Large-class, instructor-driven, lecture-based deliveries within a curriculum, which compartmentalized the content” (Strobel & van Barneveld, 2009, p. 46).

### **Summary**

This chapter introduced the flipped learning model and the research questions being sought about the teaching model. The background, problem statement, significance of the study, and definition of terms have been introduced as well. As mentioned, it is important to understand how to educate learners of the 21<sup>st</sup> century, so it is important to understand the different teaching models and know which ones help students do their best in school.

The following chapter will be a more in-depth review of the literature surrounding the flipped classroom. The focus is to explain what a flipped classroom is, introduce student achievement and engagement, and a variety of ways to flip a classroom.

## Chapter 2: Literature Review

### Introduction

Direct/explicit classrooms place the teacher at the front of the class lecturing to his/her students and then sending them home to complete their homework (Rupley, Blair, & Nichols, 2009). This direct/explicit model of teaching may be slowly changing as flipped classrooms are being introduced. Reviewing literature pertaining to flipped classrooms and the technology being used to flip the classroom will help make it easier to understand if this new teaching model is just a growing fad or one that should be used in more classrooms.

Chapter one introduced information on the flipped classroom model and the importance of studying the model. The problem statement was made along with research questions that are to be studied during research. This chapter will be an in-depth literature review about the research questions and the relationship to student achievement, and the use of the model.

Bruce, Hughes, and Somerville (2012) say that most information literacy programs do not “always extend attention to helping students engage with content through their information use processes” (p. 523). Therefore, it is important to understand what techniques in education best support the 21<sup>st</sup> century learners. Understanding student achievement and student enrichment is part of this process. Direct/explicit classroom models may no longer be as effective in a technology rich educational system.

## Methodology

In researching information for this topic, Google Scholar and Academic Search Premier, accessed via the Miller Center Resources at St. Cloud State were used.

The keyword search using “flipped classrooms” brought up many academic journals, but most of the information focused on how to flip classrooms and did not provide much information about student achievement (e.g. high school or college). For the researcher’s questions about how student achievement was impacted by the use of flipped classrooms, the keyword searches had to be clearer and more focused. In order to get the needed information, keyword searches were conducted using the following additional terms in a variety of combinations: *flipped classrooms*, *elementary schools*, *primary education*, *student-centered learning*, *educational technology*, *students*, *student achievement*, and *learning methods*. The researcher also found other studies close to the same subject using the terms *flipped classrooms* and *K12 education*. The bibliographies in these studies helped to find additional sources to review.

Flipped learning was pioneered around 2007 by science teachers Jonathan Bergmann and Aaron Sams from Colorado, meaning that the term “flipped classrooms” is relatively new (Fulton, 2012). Given this information, information about the topic should be relatively current and the researcher may be able to find out if educators are seeing a difference in student achievement levels when using the flipped classroom method.

This chapter reviews fifteen studies about the flipped classroom method and is organized by the techniques used, student achievement and engagement, and the gaps in research.

## Review and Analysis

The term “flipped classroom” comes from the concept of educators assigning lectures to be viewed at home and homework to be done in the classroom (Ash, 2012). This strategy of teaching is becoming more popular within the education system and is therefore worthy of assessing its impact on learning. The research will review the various techniques that can be used to flip a classroom to explore if any techniques appear to influence student achievement more than others. Flipped classrooms will also be compared to traditional models to see if the flipped classroom is correlated with positive gains in student achievement. Finally, gaps in the research will be reviewed to determine if there is more about the model that needs to be researched in order to find out its value in the classroom.

**Techniques.** Flipping a classroom can be accomplished in a variety of ways, so it is important to understand the differences. Research has been conducted on a half-flipped method, an in-class version of the flip, and completely flipped classroom methods. These methods share some similarities including the idea that all the classrooms use on-line lectures and videos, but how the methods are incorporated varies among educators.

***Half-flipped method.*** Westermann (2014) describes the half-flipped method as

An alternative approach to the traditional flipped paradigm for the history classroom, an approach that focuses on providing student with primary sources while providing multiple opportunities for peer-to-peer and student-to-instructor collaboration prior to the in-class meeting via a hybrid or blended learning instructional format (p. 46).



According to this, it seems that there are opportunities for the students to not only watch the videos by themselves before class but also to have opportunities to talk to their classmates and teachers before meeting in a face-to-face setting. This allows students many opportunities to process the content before meeting to do in-class assessments or assignments.

***In-class flip.*** Educators have found that some students may have problems accessing technologies when they are not in school. Therefore, there has been a need to modify the flipped classroom to accommodate the students who are unable to listen to the lectures or videos outside of class; the in-class flip may be one way of solving this. Gonzalez (2014) explains the in-class flip as one where the instructions/lectures are still recorded before class time, but they are then incorporated into one of the stations in the class. Students will go from station-to-station with the lectures being the primary station in this setting. This seems to be an easy fix to technology problems but the downside is that the units take longer to get through. This may inhibit this model from becoming a popular option of the flipped model.

***Total flip.*** Students are sent home to watch what would be primarily used as a lecture and come to class prepared to do the homework with the teacher (Rotellar and Cain, 2016). This is to help the students become prepared for “interactive and higher-order activities such as problem solving, discussions, and debates” (Kim, Kim, Khera, and Getman, 2014, p. 37).

**Flipped vs. direct/explicit.** In the direct/explicit model, a teacher stands in front of the classroom, giving lectures or showing videos about the subject being learned (Strobel & van Barneveld, 2009). The student then leaves the classroom and does homework on the subject that was taught without the help of the teacher at home. Many who teach with the flipped classroom model believe that this is where problems occur, the students do not have the

educator there to help them when they stumble across problems as they attempt to apply the concepts presented in the lecture, so they do not have the chance to discuss and understand the solution in a timely manner.

In the flipped classroom method, students are given opportunities to watch or listen to instructional videos at home, thus freeing up time in class to work on “homework” with the teacher (DeFour, 2013). Patrick (2015) states that flipped classrooms are student-centered environments because they “will empower students with voice and choice in how they learn, showing work on what they have learned and providing powerful, personalized learning experiences” (p. 1).

**Student engagement.** Bergmann and Sams (2014) state that “flipped learning is not just about using video as a direct instruction delivery tool; it’s about maximizing class time for deeper student engagement” (p. 21). With this, it is important to know what student engagement means. As defined by The Glossary of Education Reform, student engagement is defined as “the degree of attention, curiosity, interest, optimism, and passion that students show when they are learning or being taught, which extends to the level of motivation they have to learn and progress in their education” (Hidden Curriculum, 2014). Student engagement and student-centered teaching may be a driving force behind the flipped classroom model.

**Student achievement.** Student achievement is different than student engagement. Students can be engaged learners while not achieving the goals that have been set out for them. Student achievement can be defined as “the amount of academic content a student learns in a determined amount of time” (Carter, 2016). Flipped classroom models have been shown to make a difference in student achievement in some studies. Morgan (2014) wrote

that students are “achieving remarkable results after flipping their classroom” (p. 239). In a study completed in 2012 by Finkel on a high-school in Michigan where the flipped classroom method was used, the failure rate of ninth grade math students dropped significantly from 44% to 13% (Goodwin and Miller 2013, p. 78).

Rotellar and Cain (2016) studied the achievement of pharmacy students who used the flipped classroom model as well; they found a “steady improvement in students’ academic scores (para. 6). Their studied compared the flipped classroom achievement to the same course taught a year earlier using the direct/explicit method.

A couple of years before Rotellar and Cain’s research in 2012, another study that was conducted showed that there was “no significant difference in student performance between flipped classrooms and traditional classrooms” (Kim, Kim, Khera, and Getman, 2014, p. 38). The researchers noted that there seemed to be a lack of support from the teacher; they speculated that this lead to lower student engagement in the subject (Kim, Kim, Khera, and Getman, 2014).

### **Gaps in Research**

It has been a common theme throughout the research that the words “fairly new”, “limited”, and “not enough data” have been used in the academic journals that the researcher has found. In an article written by Goodwin and Miller (2013) on flipped classrooms, they reported that teacher use of the Flip Learning Network social media site increased significantly from 2011 to 2012; with that information, the researcher believed that there would be more viable sources to help with researching the model.

O’Donnell, Lawless, Sharp, and Wade (2015) talk about personalized e-learning activities and how if they are poorly designed they may be hurting student achievement and making it

hard for students to understand what is needed from them. This could also be a factor in the flipped model of teaching when trying to personalize the learning towards the students if students are not showing any improved achievement and engagement. They state that a “sound pedagogical approach and appropriate use of instructional design techniques are required to ensure adaptive content is useful to learners (O’Donnell, Lawless, Sharp & Wade, 2015, p. 23). Educators not given useful professional development in order to understand the technology and possess the ability to personalize the learning to their students may be a factor in lowered student achievement and engagement.

More information is also needed on how much technology the students’ need to have at home for them to be successful in a flipped model classroom. Very little information was found about this in any of the research to date.

### **Summary**

In this chapter, several different methods of flipping a classroom have been talked about. Student achievement and student engagement have also been discussed. Also, the researcher noted that few studies were found about empirical studies on student achievement scores.

The next chapter will outline the methods that will be applied to this research study, how those methods will be applied, and a description of the participants in the study.

## Chapter 3: Research Method

### Introduction

In Chapter 1 of this paper, information was introduced about the flipped classroom model. Pros and cons were examined about the model and how it was being used in classrooms. In Chapter 2, the researcher conducted a literature review pertaining to flipped classroom models and how they have been implemented into classrooms. In the third chapter of this paper, the research design will be explored, including the research questions, the sample population, and the research procedures, approaches, and limitations.

### Research Design

The research method that was used in this study was quantitative. The quantitative research involves gathering information through a survey based on the flipped classroom model of teaching. The survey questions will be written by the researcher and approved by the advisory committee.

**Quantitative research.** One of the main areas of focus was student achievement and changes educators perceive in students when using the flipped model.

The survey was administered to educators who use the flipped model throughout Hennepin and Anoka County schools. The survey instruments was developed based upon information from scholarly journal articles discussed in Chapter 2.

### IRB Approval

Because this study included human subjects, approval from St. Cloud State University Institutional Review Board (IRB) was required (see Appendix F). First, the researcher needed to

take the IRB training for Graduate students' test, available from the Collaborative Institutional Training Initiative (CITI Program). The minimum passing score on the test is 70 percent. The researcher had previously taken and passed the graduate student level IRB certification test on February 28, 2016. (See Appendix D) .

### **Procedures**

The survey (see Appendix C) that was used was completed anonymously. The researcher sent a cover letter explaining the purpose of the study, who to contact if they had questions, where they are able to view information once it is collected, and that their participation is voluntary.

### **Participants of Study, Population, and Sampling Method**

**Schools.** The schools sampled contained grades Kindergarten through twelfth grade located in Hennepin and Anoka County in Minnesota. The student population in these schools ranged from four hundred to one thousand students. The populations of these schools represented a very diverse ethnicity. The teachers and students in these schools also have access to a variety of technologies (e.g. internet access, iPads, Chromebooks, etc.). Names and contact information for the teachers who were contacted was accessed through each school's website.

**Teachers.** The participants that were surveyed were licensed K-12 teachers in Minnesota. At first, the researcher went to the TIES website and looked at the teachers awarded to being the exceptional teacher of the year in 2016. Then after finding teachers awarded in the Hennepin schools districts, the researcher then went and studied the different

schools websites. Research on whether the schools had a technology plan determined if the researcher sent email requests to the Principal's asking for permission to survey staff. The researcher had difficulty obtaining any response to the initial email sent out to the schools, one school replied and asked to see the survey, the survey was sent to that Principal and then she never responded.

After receiving no response from any other schools, the researcher then asked family members and friends who were part of the Anoka and/or Hennepin school districts if they would be willing to help ask for permission to distribute the survey. The researcher made sure the schools all had technology initiatives written up in the website for the school. The researcher then emailed a letter to either the Principal of the school or the school district asking for permission to survey the teachers in the school (See Appendix E). Once the permission was granted, the educators were picked to participate depending on if they were a classroom teacher and/or elective specialist (i.e. Technology Integrationist, Media Specialist, etc). An invitation was sent out to 122 teachers via school website email information (See Appendix A). The invitation was intended to see if educators were willing to participate in a study relating to the flipped classroom model. If were willing to participate, a link was active in the email they received that lead them to the survey. Out of the 122 participants that were sent an email, 63 educators responded to the survey.

**Sampling method.** Schools whose student population is four hundred or more were chosen. The researcher strongly believed that the more students the schools had in them, the more likely they would be to have more kinds of technology. Schools were also chosen from districts with either an urban or suburban population, and only with technology statements on

their websites. Also, the researcher looked on the schools websites to see if they were able to provide their population size and the types of technology they used.

**Variables**

Independent variable = the use of a flipped classroom

Dependent variable = student achievement while using the flipped classroom model as determined by the teacher.

**Assumptions**

One assumption is that all educators will have knowledge of the flipped classroom model even if they are not currently using it. It is also assumed that the educators will provide accurate responses to the survey.

**Limitations**

A limitation of this study may be the access that students have to technology in the schools and outside of school. Another limitation may be that only educators who use the flipped classroom method will respond to the survey.

**Delimitations**

With the importance of technology in the field of education, incorporating that use into the classroom seems logical, but it is still necessary to find out if it helps students to learn in an effective manner.

For the purpose of this study, only schools that have access to the internet, technology devices (i.e. iPads, Chromebooks, laptops, etc.), and have technology integration information on their websites were a part of this study.



## Research Approach

Sixty-three participants who responded that they were willing to participate in the study were notified by an email explaining the nature of the research and containing a link to a survey. The survey was designed so that educators were asked questions on what they have seen in their classroom or information they know about their use of the flipped classroom method, the questions were multiple choice with a not available answer available to them if they needed it.

## Analysis

The data was collected, in the next chapters the researcher will describe and summarize the data. Suggestions for further research will be made, along with reflection by the research on all the aspects of the study.

## Timeline

- ❖ November 2016 –
  - Finish edits on first part of the paper
  - Submit proposal meeting
  - Have proposal meeting
  - Research schools websites
- ❖ December 2016 –
  - Works on edits suggested by committee
- ❖ January 2017 –
  - Turn in proposal draft to IRB committee
  - Send out invitations to surveys
  - Start to compile findings from completed surveys
  - Work on Chapter 4
- ❖ Feb/March 2017 –
  - Work on Chapter 4
  - Work on Chapter 5

- Submit final proposal meeting
- ❖ April –
  - Have final proposal meeting
  - Have all copies made need to register starred paper
  - Get signatures from all committee members
  - Pay all of the fees associated with registering starred paper at the School of Graduate Studies office
  - Remind adviser to submit a grade change if this has not been done

### **Summary**

This chapter discussed the research that was conducted on flipped classrooms. It covered research methods, approaches, and limitations to this approach.

## Chapter 4: Results

### Introduction

Investigation of the role that flipped classrooms might play in student achievement was the focus of this starred paper. To that end, a survey was developed and distributed. The data collected in that survey will be reported in this chapter.

The participants from the study came from six schools in the Hennepin County and Anoka County school districts. The researcher was having difficulty receiving responses when she first requested permission from principals, one principal responded that they did not take emails like that at their level and the district would need to be contacted (see Appendix D). The researcher forwarded the request to two different district offices. After that, she then sent out request to additional schools in hopes that she would get larger numbers of respondents. Six Principals and /or District offices replied that they would be willing to let their staff participate after a total of twelve schools were asked to participate.

Out of the six schools that participated, one hundred and twenty-two surveys were emailed to classroom teachers, media specialists, and technology integration teachers in the K-12 school system, they were chosen because the researcher believed that they would be the ones using the teaching model in the classrooms. A total of sixty-three recipients completed the survey for a fifty-two percent participation rate. The requests to the Principals and/or Schools Districts to request staff participation were sent out on February 6, 2017. Upon receiving permission from the school administration, the email with a link to the survey was sent to the staff beginning on February 13, 2017; completed surveys were received from February 13<sup>th</sup> through February 21, 2017 (see Appendix A). The educators were sent a

reminder email on February 20, 2017 to complete the survey before February 21, 2017 (see

Appendix B).

## Findings

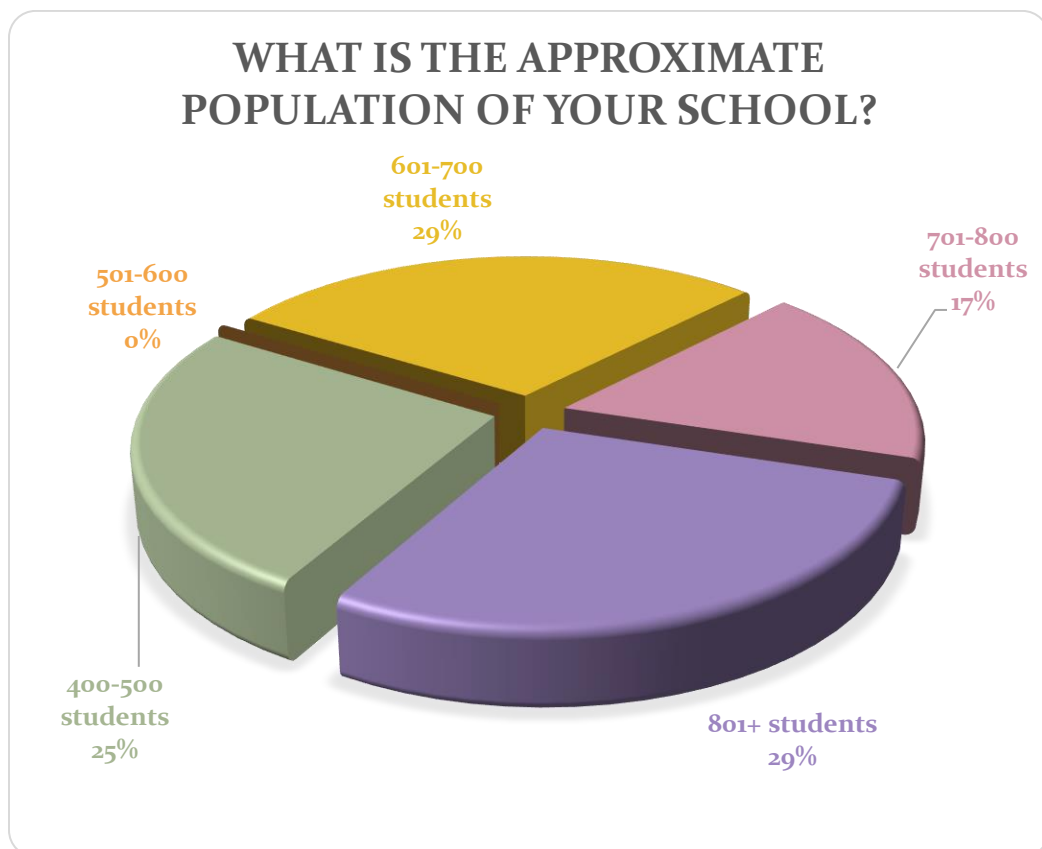


Figure 1. Population

Table 1

*Years of Experience*

How many years have you been teaching?	Years Teaching
0-5 years	15
6-11 years	20
12-17 years	15
18+ years	13

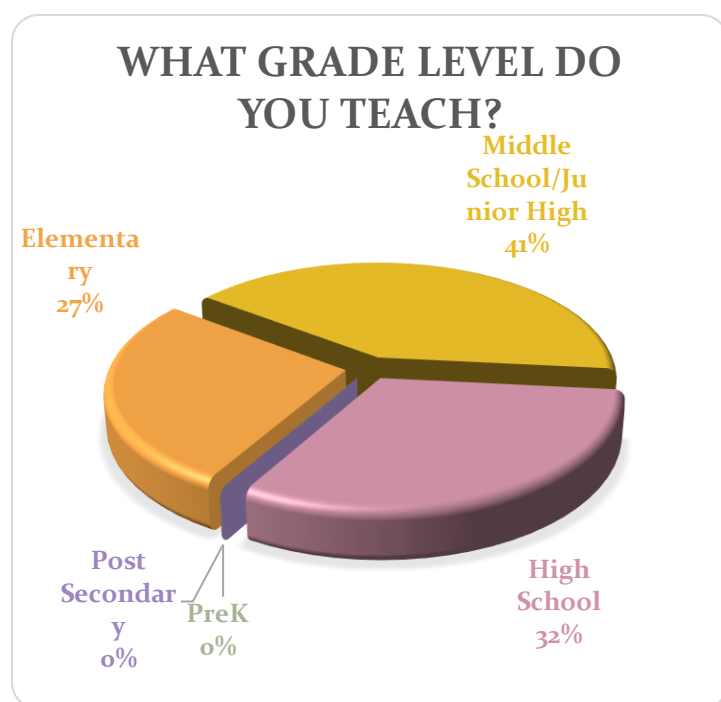


Figure 2. Grade Level Taught

Table 2

*Respondents Age*

How old are you?	Number Responded
21-25 years	6
26-31 years	13
32-37 years	8
38-42 years	9
43-47 years	1
47+ year	1
Prefer not to answer	23

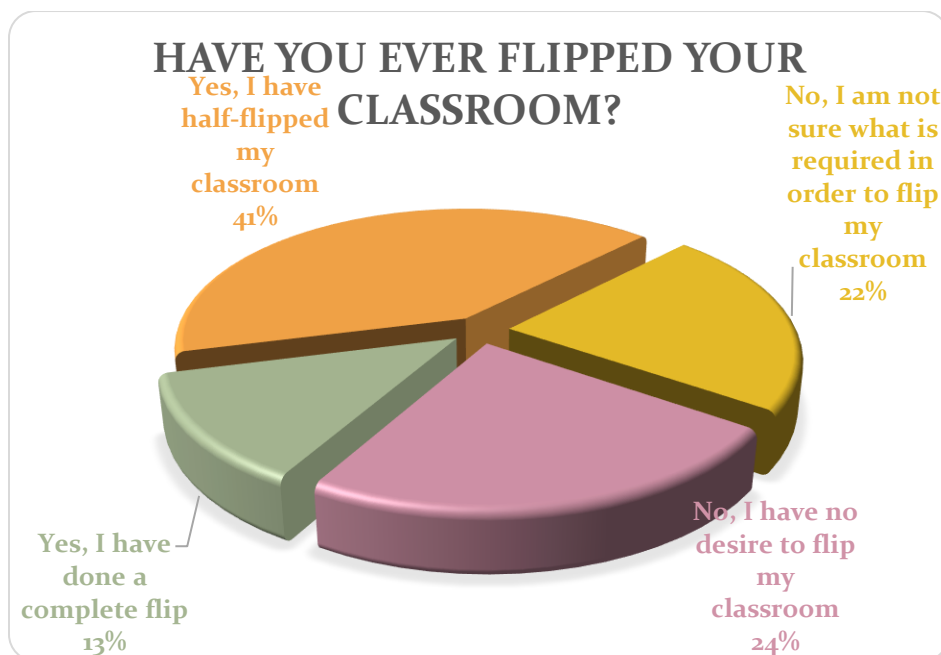


Figure 3. Flipped Classroom

Table 3

*Professional Development*

Have you had the opportunity to receive professional development on the flipped classroom model?	Amount of Time Spent
Yes, more than a full day	1
Yes, at least one full day	1
Yes, at least a half day	18
Yes, at least an hour	15
Not that I am aware of	22
No	6

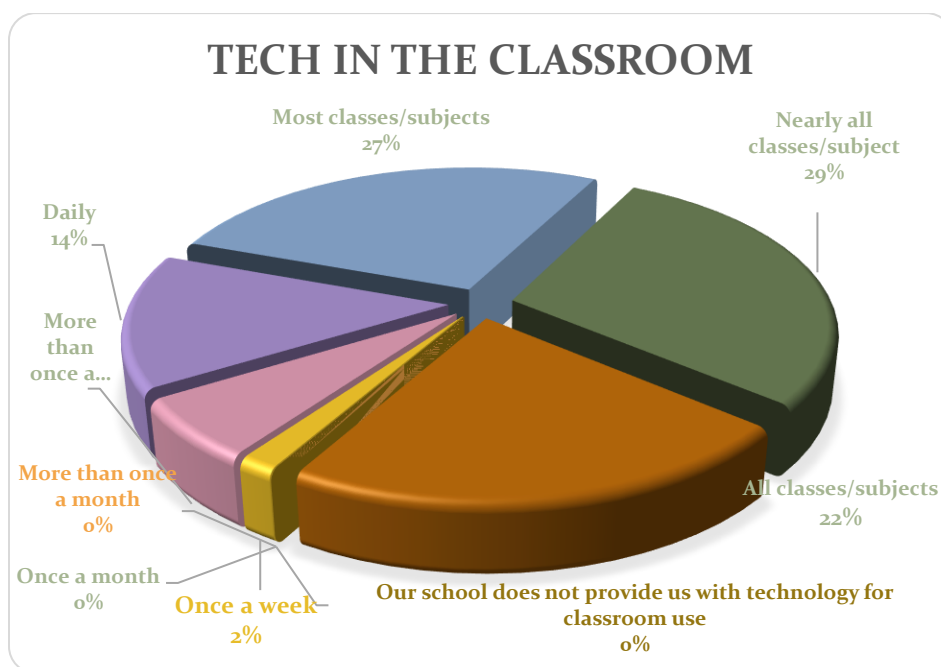


Figure 4. Technology in Classroom

Table 4

*Homework Requiring Technology*

How often do you assign homework that requires the use of technology (i.e. Chromebooks, iPads, mobile devices, etc.) at home?	Tech use
Once a month	1
More than once a month	4
Once a week	5
More than once a week	41
Daily	12
Never	-

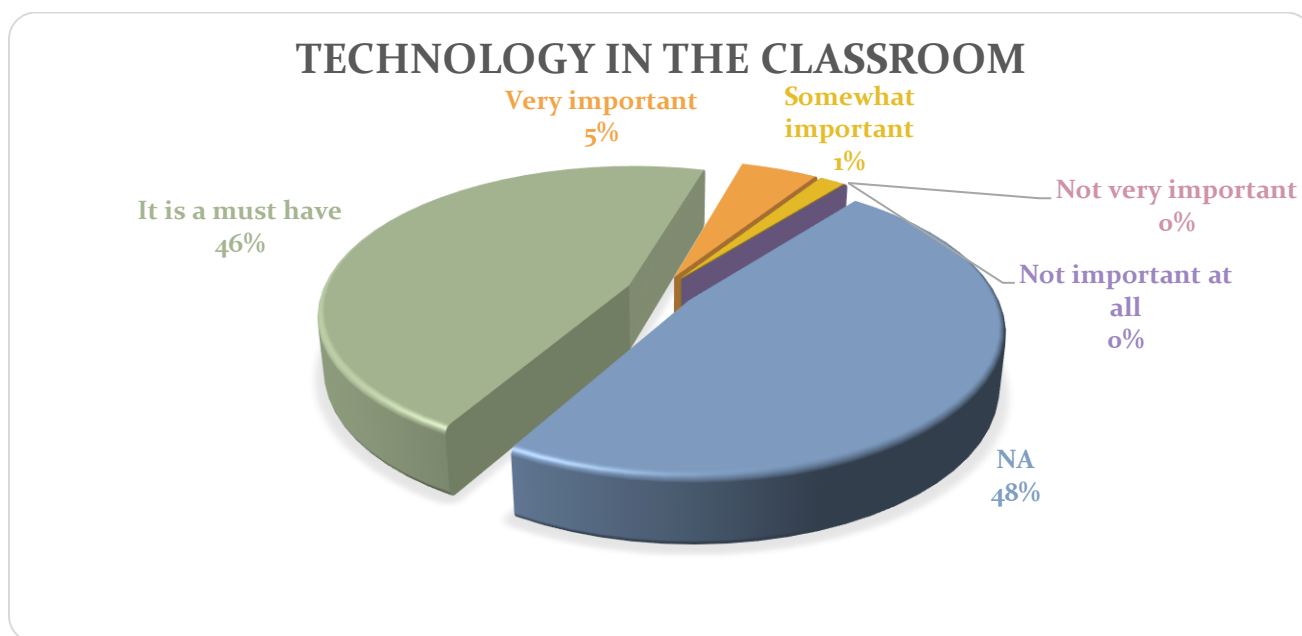


Figure 5. Technology (i.e. Chromebooks, iPads, mobile devices, etc.) in Classroom for Student

Use



Table 5

*Importance of Technology (i.e. Chromebooks, iPads, mobile devices, etc.) Outside of Class*

If you have flipped your classroom or are starting to flip your classroom, how important is it to have technology (i.e. Chromebooks, iPads, mobile devices, etc.) for students to use outside of class?	Importance
It is a must have	28
Very important	7
Somewhat important	-
Not very important	-
NA	28

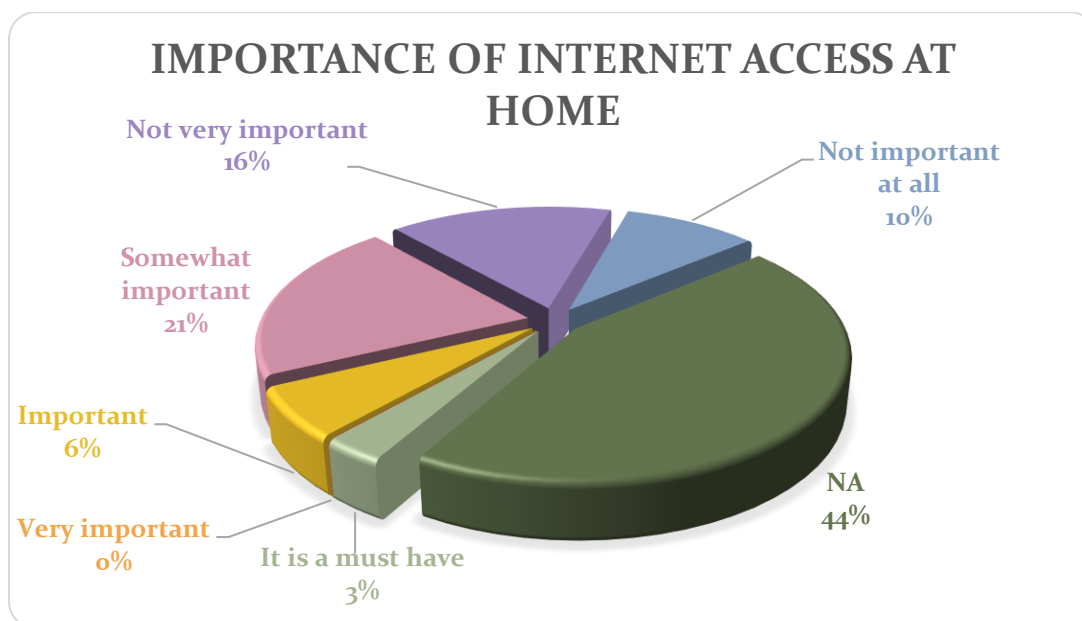


Figure 6. Importance of Internet Access at Home

Table 6

*Student Achievement*

If you have flipped your classroom or are starting to flip your classroom, have you noticed a difference in student achievement?	Achievement
Student achievement has improved a lot since I've been using the model	6
Student achievement has improved a little since I have been using the model	10
Student achievement has not changed at all since I have been using the model	16
Student achievement has declined since I've been using the model	-
NA	31

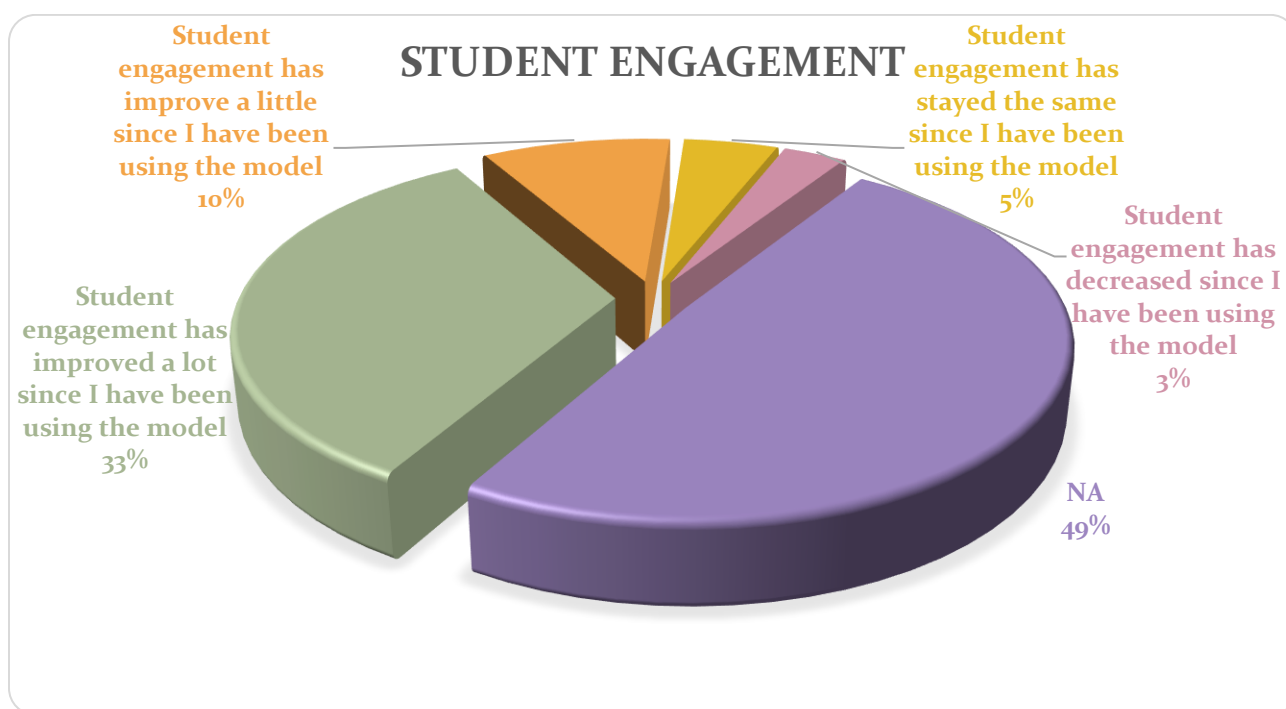


Figure 7. Student Engagement

Table 7

*Number of Participants Who Believe the Flipped Model is Important to Study*

If you have not flipped your classroom, do you believe it is a model worth learning about? ▾	Answer ▾
Yes	15
No	7
Other	7

### Summary

The results of the survey will be analyzed and presenting in Chapter 5. The researcher will also reflect on the process and make recommendations for further research.

## **Chapter 5: Findings and Reflection**

### **Introduction**

Student success in the classroom may be the most important aspect of teaching and learning. There are many different teaching methods and strategies for educators to use in their classroom, but if it is a strategy that is not leading to student success, the educator may need to reevaluate that strategy, wither to refine it to make it more effective or replace it with other strategies. Educators need to prepare their students to become 21<sup>st</sup> century learners, which means the students need to know how to use a variety of technologies effectively. Flipped classroom teaching has become a strategy used by teachers a one that has the potential to be effective with 21<sup>st</sup> century learners, but because it is a relatively new strategy, it is unclear how effective it is in helping student achievement.

### **The Research Questions**

Does flipping a classroom lead to improve student achievement? This was one of the research questions being explored. The results of this survey provided no clear evidence that student achievement improved overall. The only clear result was that zero percent of teachers who participated in the study saw a decline in student achievement when using the flipped classroom model. Of the educators who use the flipped classroom model, nineteen percent of them reported a dramatic increase in student achievement and thirty-one percent reported an increase in student achievement, while fifty-two percent said that the student achievement stayed the same. The research on this should be continued to establish any changes in students' achievement and how they are measured.

Another research question explored was student engagement in the classroom and whether it increased when using the flipped model. The student engagement levels did seem to rise within the classrooms that used the flipped model, with twenty-seven out of the thirty-two participants saying that they saw improvement ranging from large to a small amount. Only two participants saw a decrease in engagement. Again, with the small amount of participants who took the survey, this data cannot be generalized to a broad population. Further research could look at how student engagement was measured and examine reasons for either increases or decreases in engagement.

A third research question explored was the importance of having technology for student use inside and outside of the classroom (i.e. Chromebooks, iPads, mobile devices, etc.). One hundred percent of the participants agreed that students must have technology or that it is very important to have technology outside of the classroom in order to have the flipped model work. This means that either the students must be provided with a 1:1 device by the school, or they need to have some kind of technology device at home such as Chromebooks, iPads, mobile devices, etc. This could be a problem for families who cannot afford the cost of the technology, and it will likely affect those students in a flipped classroom. Determining out how teachers use the flipped model with students who do not have access to needed technology is an area for further research.

The final research question was if teachers thought that having Internet access at home was necessary for the flipped model class to work. Out of the thirty-two participants, nineteen of them said that it was somewhat important to it being a must have. Sixteen of them did not believe that it was important in order for the students to be able to participate in the flipped

classroom model. The participants who answered that it was not important were asked to explain why it was not (see Appendix E). Many of the participants said that they could either download needed content to a mobile device or upload it to a USB for the student to use on a computer. Another participant said that because it was the way s/he wanted to run the class so s/he was willing to work with students if they needed to come before school, after school, or during lunch. The priority was making certain that students had access to computer/Internet and was able to keep up with the rest of the class. An area of future research is to try to determine if there is a relationship between student achievement and Internet access outside of the school setting.

The research did not provide sufficient data to draw a conclusion on how well students are achieving using the flipped classroom model. Some teachers who do not use the flipped classroom model said they do not use it because, "I've talked to other teachers who have done it, and they say it is a lot of work without much difference" (see Appendix E). Another replied with, "So many fads, so many times trying fads, no reason to keep changing when it seem to go back to the way I've always been teaching".

### **Recommendations for Application**

This research indicates that student achievement has not dropped in any of the respondent's classrooms as a result of using the flipped classroom model. With the added advantage of the students learning how to use flipped classroom technology, it would appear beneficial to continue using the model. Also, because student engagement seems to have risen in the classes that use the flipped model, it might be reasonable to assume that student achievement will also rise in these types of classrooms. Further research is needed before any

definitive conclusions can be drawn. In 2015, Kathy Dyer wrote “findings indicated that the level of attentiveness to classroom activities and engagement in peer conversations about appropriate academic material correlated to performance across subject areas” (para. 2). It is a hope that if a student remains engaged that they will learn more and be able to show student achievement results.

One of the bigger needs that arose from survey responses is that more training needs to be done. Out of the participants who completed the survey, forty-four percent of them were either unaware that there was training or just did not have any. Training may help the educators feel more knowledgeable about the model which could help with their confidence in trying it out in their own classroom as well as encouraging colleagues to implement it.

### **Reflection**

The library media specialist (LMS) should be one of the first teachers trained on this model. The LMS is one of the main people in the building who already has technology training and often seen as one of the innovators in the school. National guidelines published by the American Association of School Librarians state that it is the media specialist’s job to collaborate with all the staff in his/her building and also interact with other library media specialist in the district. The collaboration between schools and teachers could lead to more evidence collection about the model if more educators were into to it and given more training.

### **Recommendations for Further Research**

There is a lot of information available for people wanting to use the model. The research that is missing is on how well it actually works in a school environment. It is

recommended that this model remains the subject of research and reviewed to see if there are any correlations between flipped learning and student achievement. Also, further research on how LMSs can help incorporate this model into the school and school district is further recommended.

## **Conclusion**

Schools and educators have been around for a long time. Different styles of teaching and learning have taken place over these years. There may be no “best” model to use in a classroom, but there are ones that work better both for the teacher and the students. It is educators’ responsibility to make sure their students are understanding what they are being taught. If the students are not achieving results in their classroom, it is the educators’ responsibility to use a method that works for the students and that is relevant to what they need to teach. For this reason, exploring multiple models and strategies, such as the flipped classroom, needs to be continued.



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**APPENDIX A: Survey E-Mail****Sender information:**

Korrie Zupon Library Media Specialist pursuing masters' degree in Information Media

**Appeal for help:**

Thank you for taking the time to read this. I am writing to request your participation in a short survey. I have been researching on the Flipped Classroom Model of teaching and am trying to come to some understandings about the model.

**How to access the survey:**

It should only require about five minutes of your time to complete the survey. There are seven yes or no answer questions and one question asking that you write your thoughts. The survey will be completely anonymous, your name or school will not be released. Please have the survey completed by February 22, 2017.

If you are willing to complete the survey, please follow the link below.

<https://goo.gl/forms/OP6YJOYb5gW0n8GM2>

**Contact information:**

If you need to get a hold of me for any questions or comments, please email me at

[zuko0301@stcloudstate.edu](mailto:zuko0301@stcloudstate.edu)

Thank you for your time and cooperation. Your feedback is very important to me.

Korrie Zupon

**APPENDIX B: Reminder Email****Sender information:**

Korrie Zupon Library Media Specialist pursuing masters' degree in Information Media

**Reminder**

If you have not had a chance to take the survey yet, I would appreciate your reading the message below. This survey should take no longer than 5 minutes to complete.

This message has gone to everyone in the selected sample population, so if you have already completed the survey, please disregard this reminder.

**How to access the survey:**

It should only require about five minutes of your time to complete the survey. There are seven yes or no answer questions and one question asking that you write your thoughts. The survey will be completely anonymous, your name or school will not be released. Please have the survey completed by February 22, 2017.

If you are willing to complete the survey, please follow the link below.

<https://goo.gl/forms/OP6YJOYb5gW0n8GM2>

**Contact information:**

If you need to get a hold of me for any questions or comments, please email me at

[zuko0301@stcloudstate.edu](mailto:zuko0301@stcloudstate.edu)

Thank you for your time and cooperation. Your feedback is very important to me.

Korrie Zupon

**APPENDIX C: Survey****Flipped Classroom Survey**

For the purpose of this study, the definition of flipped classrooms is:

Direct instruction about the content will be assigned to students at home via a mobile device or personal computer where they can watch or listen to the instruction. Class time will be focused on the work that would normally be assigned outside of the classroom.

**What is the approximate population of your school? \***

- ☐ 400-500 students
- ☐ 501-600 students
- ☐ 601-700 students
- ☐ 701-800 students
- ☐ 801+ students

**How many years have you been teaching? \***

- ☐ 0-5 years
- ☐ 6-11 years
- ☐ 12-17 years
- ☐ 18+ years

**What grade level do you teach? \***

- ☐ PreK
- ☐ Elementary
- ☐ Middle School/Junior High
- ☐ High School
- ☐ Post secondary

**How old are you? \***

- ☐ 21-25 years
- ☐ 26-31 years
- ☐ 32-37 years
- ☐ 38-42 years
- ☐ 43-47 years
- ☐ 47+ years
- ☐ Prefer not to answer

**Have you ever flipped your classroom? \***

- ☐ Yes, I have done a complete flip
- ☐ Yes, I have half-flipped my classroom
- ☐ No, I am not sure what is required in order to flip my classroom
- ☐ No, I have no desire to flip my classroom

**If you answered no to the question above, could you explain?**



**Have you had the opportunity to receive professional development on the flipped classroom model? \***

- ☐ Yes, more than a full day
- ☐ Yes, at least one full day
- ☐ Yes, at least a half day
- ☐ Yes, at least an hour
- ☐ Not that I am aware of
- ☐ No



**How often do you use technology (i.e. Chromebooks, iPads, mobile devices) in your classroom? \***

- ☐ Once a month
- ☐ More than once a month
- ☐ Once a week
- ☐ More than once a week
- ☐ Daily
- ☐ Most classes/subjects
- ☐ Nearly all classes/subjects
- ☐ All classes/subjects
- ☐ Our school does not provide us with technology for classroom use

**How often do you assign homework that requires the use of technology (i.e. Chromebooks, iPads, mobile devices, etc.) at home? \***

- ☐ Once a month
- ☐ More than once a month
- ☐ Once a week
- ☐ More than once a week
- ☐ Daily
- ☐ Never

**If you have flipped your classroom or are starting to flip your classroom, how important is it to have technology (i.e. Chromebooks, iPads, mobile devices, etc.) for student to use during class? \***

- ☐ It is a must have
- ☐ Very important
- ☐ Somewhat important
- ☐ Not very important
- ☐ Not important at all

**If you have flipped your classroom or are starting to flip your classroom, how important is it to have technology (i.e. Chromebooks, iPads, mobile devices, etc.) for student to use outside of class? \***

- ☐ It is a must have
- ☐ Very important
- ☐ Somewhat important

- ☐ Not very important
- ☐ Not important at all

**If you have flipped your classroom or are starting to flip your classroom, how important is it to have internet access at home? \***

- ☐ It is a must have
- ☐ Very important
- ☐ Important
- ☐ Somewhat important
- ☐ Not very important
- ☐ Not important at all

**If you answered not very important or not important at all, can you explain why?**

**If you have flipped your classroom or are starting to flip your classroom, have you noticed a difference in student achievement? \***

- ☐ Student achievement has improved a lot since I've been using the model
- ☐ Student achievement has improved a little since I have been using the model
- ☐ Student achievement has not changed at all since I have been using the model
- ☐ Student achievement has declined since I have been using the model
- ☐ NA

**If you have flipped your classroom or are starting to flip your classroom, have you noticed a difference in student engagement? \***

- ☐ Student engagement has improved a lot since I have been using the model
- ☐ Student engagement has improved a little since I have been using the model
- ☐ Student engagement has stayed the same since I have been using the model
- ☐ Student engagement has decreased since I have been using the model
- ☐ NA

**If you have not flipped your classroom, do you believe it is a model worth learning about?**

- ☐ ☐ Yes
- ☐ ☐ No
- ☐ ☐ Other:

## APPENDIX D: IRB Certification Test

### IRB Certification Test

#### COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

##### COMPLETION REPORT - PART 1 OF 2 COURSEWORK REQUIREMENTS\*

\* NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- Name: **Katie Zupko** (ID: 5428061)
- Email: **zuko0301@stcloudstate.edu**
- Institution Affiliation: **St. Cloud State University** (ID: 1328)
- Phone: **6127024636**
- Curriculum Group: **Basic/Refresher Course - Human Subjects Research**
- Course Learner Group: **IRB Training for Graduate Students**
- Stage: **Stage 1 - Basic Course**
- Report ID: **18863720**
- Completion Date: **28-Feb-2016**
- Expiration Date: **28-Feb-2021**
- Minimum Passing: **70**
- Reported Score\*: **72**

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Belmont Report and CITI Course Introduction (ID: 1127)	28-Feb-2016	3/3 (100%)
Students in Research (ID: 1321)	28-Feb-2016	4/5 (80%)
Informed Consent - SBE (ID: 504)	28-Feb-2016	5/5 (100%)
St. Cloud State University (ID: 12784)	28-Feb-2016	No Quiz
The Federal Regulations - SBE (ID: 502)	28-Feb-2016	1/5 (20%)

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: <https://www.citiprogram.org/verify/?39f484a3-5cc6-4ddc-a30b-fbf9ea152be5>

CITI Program  
Email: [support@citiprogram.org](mailto:support@citiprogram.org)  
Phone: 888-628-6929  
Web: <https://www.citiprogram.org>

**Appendix C Continued**

#### COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)

## COMPLETION REPORT - PART 2 OF 2 COURSEWORK TRANSCRIPT\*\*

\*\* NOTE: Scores on this Transcript Report reflect the most current quiz completions, including quizzes on optional (supplemental) elements of the course. See list below for details. See separate Requirements Report for the reported scores at the time all requirements for the course were met.

- **Name:** Korrie Zupon (ID: 5428061)
- **Email:** zuko0301@stcloudstate.edu
- **Institution Affiliation:** St. Cloud State University (ID: 1328)
- **Phone:** 6127024636
  
- **Curriculum Group:** Basic/Refresher Course - Human Subjects Research
- **Course Learner Group:** IRB Training for Graduate Students
- **Stage:** Stage 1 - Basic Course
  
- **Report ID:** 18863720
- **Report Date:** 31-Oct-2016
- **Current Score\*\*:** 79

REQUIRED, ELECTIVE, AND SUPPLEMENTAL MODULES	MOST RECENT	SCORE
Students in Research (ID: 1321)	28-Feb-2016	4/5 (80%)
History and Ethical Principles - SBE (ID: 490)	28-Feb-2016	3/5 (60%)
Defining Research with Human Subjects - SBE (ID: 491)	28-Feb-2016	4/5 (80%)
Belmont Report and CITI Course Introduction (ID: 1127)	28-Feb-2016	3/3 (100%)
The Federal Regulations - SBE (ID: 502)	28-Feb-2016	4/5 (80%)
Assessing Risk - SBE (ID: 503)	28-Feb-2016	3/5 (60%)
Informed Consent - SBE (ID: 504)	28-Feb-2016	5/5 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	28-Feb-2016	4/5 (80%)
St. Cloud State University (ID: 12784)	28-Feb-2016	No Quiz

For this Report to be valid, the learner identified above must have had a valid affiliation with the CITI Program subscribing institution identified above or have been a paid Independent Learner.

Verify at: <https://www.citiprogram.org/verify/?39f484a3-5cc6-4ddc-a30b-fbf9ea152be5>

Collaborative Institutional Training Initiative (CITI Program)

Email: [support@citiprogram.org](mailto:support@citiprogram.org)

Phone: 888-529-5929

Web: <https://www.citiprogram.org>

**APPENDIX E: Request for Permission to Conduct Research**

Korrie Zupon

Library Media Specialist

St. Cloud State University

[zuko0301@stcloudstate.edu](mailto:zuko0301@stcloudstate.edu)

**REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN YOUR SCHOOL**

To Whom it May Concern:

My name is Korrie Zupon, and I am an Information Media student at St. Cloud State University. The research I wish to conduct for my Masters Starred Paper involves the study of flipped classrooms and student achievement. This project will be conducted under the supervision of Marcia Thompson (St. Cloud State University advisor).

I am hereby seeking your consent to survey teachers in your school.

I have provided you with a copy of the approval letter which I received from the SCSU's Institutional Review Board (IRB) committee

The survey is completely anonymous. I will not be asking for names, when the teachers have finished the survey, I will not have a way to track where the response has come from. If you would like to look at the survey before deciding, I will include the link. Upon completion of the

study, I undertake to provide the St. Cloud State with a bound copy of the full research report. If you require any further information, please do not hesitate to contact me: [zuko0301@stcloudstate.edu](mailto:zuko0301@stcloudstate.edu), [kzupon@gmail.com](mailto:kzupon@gmail.com), or by phone number 612-702-4636. Thank you for your time and consideration in this matter.

Yours sincerely,

Korrie Zupon

St. Cloud State University

Survey Link <https://goo.gl/forms/6wuwDQyxWsoDxdfp1>

## Appendix F: IRB Approval Letter



### Institutional Review Board (IRB)

720 4th Avenue South AS 210, St. Cloud, MN 56301-4498

**Name:** Korrie Zupon

**Address**

**Email:** zuko0301@stcloudstate.edu

### IRB PROTOCOL DETERMINATION: **Exempt Review**

**Project Title:** Flipped Classrooms and student Achievement

**Advisor** Marcia Thompson

The Institutional Review Board has reviewed your protocol to conduct research involving human subjects.  
Your project has been: **APPROVED**

Please note the following important information concerning IRB projects:

- The principal investigator assumes the responsibilities for the protection of participants in this project. Any adverse events must be reported to the IRB as soon as possible (ex. research related injuries, harmful outcomes, significant withdrawal of subject population, etc.).

- For expedited or full board review, the principal investigator must submit a Continuing Review/Final Report form in advance of the expiration date indicated on this letter to report conclusion of the research or request an extension.

-Exempt review only requires the submission of a Continuing Review/Final Report form in advance of the expiration date indicated in this letter if an extension of time is needed.

- Approved consent forms display the official IRB stamp which documents approval and expiration dates. If a renewal is requested and approved, new consent forms will be officially stamped and reflect the new approval and expiration dates.

- The principal investigator must seek approval for any changes to the study (ex. research design, consent process, survey/interview instruments, funding source, etc.). The IRB reserves the right to review the research at anytime.

If we can be of further assistance, feel free to contact the IRB at 320-308-3290 or email [ri@stcloudstate.edu](mailto:ri@stcloudstate.edu) and please reference the SCSU IRB number when corresponding.

**IRB Institutional Official:**

Dr. Latha Ramakrishnan  
Interim Associate Provost for Research  
Dean of Graduate Studies

#### OFFICE USE ONLY

SCSU IRB# 1675 - 2090	Type: Exempt Review	Today's Date: 1/31/2017
1st Year Approval Date: 1/28/2017	2nd Year Approval Date:	3rd Year Approval Date:
1st Year Expiration Date:	2nd Year Expiration Date:	3rd Year Expiration Date:



## Continuing Review / Final Report

Principal Investigator: **Korrie Zupon**

Co-Investigator:

Project Title: **Flipped Classrooms and student Achievement**

If the project has been completed (no longer collecting data on human subjects) please indicate your projects status under Final Report and complete questions 1 through 5. If you have completed collecting data on human subjects but continue to analyze the data, as long as no new data is being obtained, your project would be considered completed.

If the project has not been completed (you are collecting data on human subjects) please indicate the status of your project under Continuing Review/Project Continuation and answer questions 1 through 5.

### Final Report

- ☐ The Project has been completed.  
☐ Project has not and will not be conducted. Explain:

### Continuing Review/Project Continuation

- ☐ Data collection continues with enrolled participants.  
☐ Participant recruitment continues following approved IRB protocol.

Have any changes been made to your research project (changes in subject recruitment, informed consent documents, design, methodology, procedures, etc.) since it was approved by the IRB?

- ☐ No  
☐ Yes, explain:

Final Report and Continuing Review/Project Continuation, please answer the following:

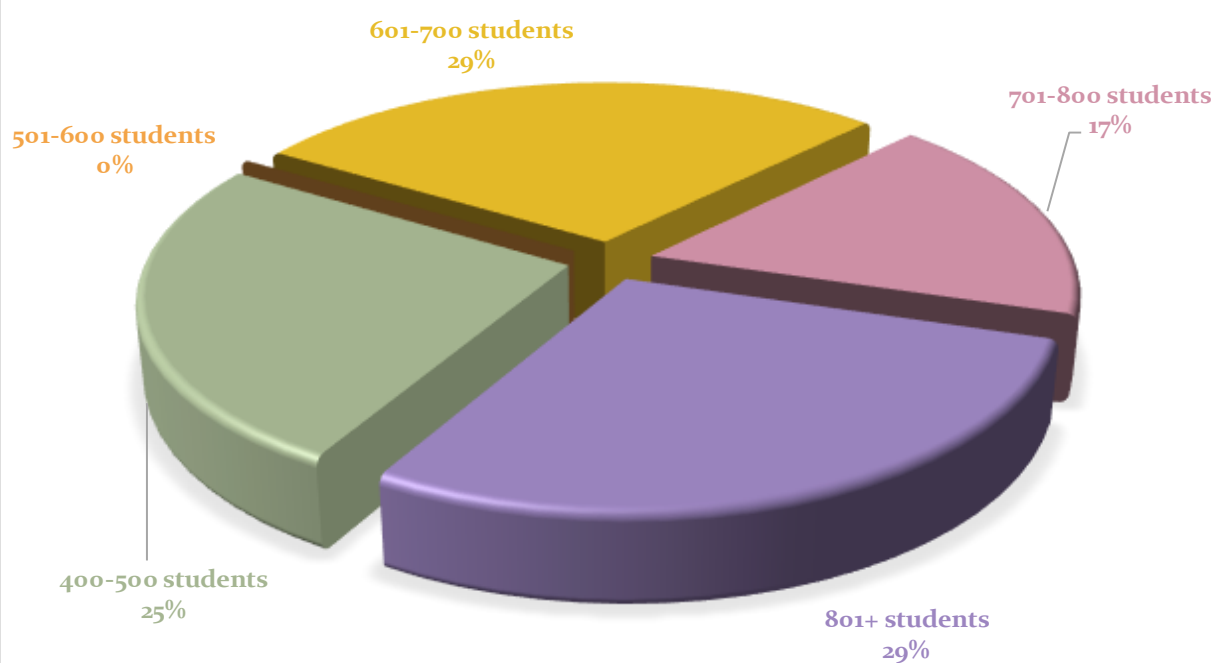
3. How many participants have participated in your study \_\_\_\_\_
4. Have any adverse events (complaints, unexpected reactions, discomfort, or problems) occurred during this research project  
☐ No  
☐ Yes, explain:
5. Have any participants withdrawn from the research, either voluntarily or at the researcher's request?  
☐ No  
☐ Yes, explain:
6. Has any new information been identified that may affect the willingness of subjects to participate in this research project?  
☐ No  
☐ Yes, explain:
7. Have any changes been made to your research project (changes in subject recruitment,

## Appendix G: Survey Replies

### Population

What is the approximate population of your school?	Student Population
400-500 students	16
501-600 students	-
601-700 students	18
701-800 students	11
801+ students	18

### WHAT IS THE APPROXIMATE POPULATION OF YOUR SCHOOL?



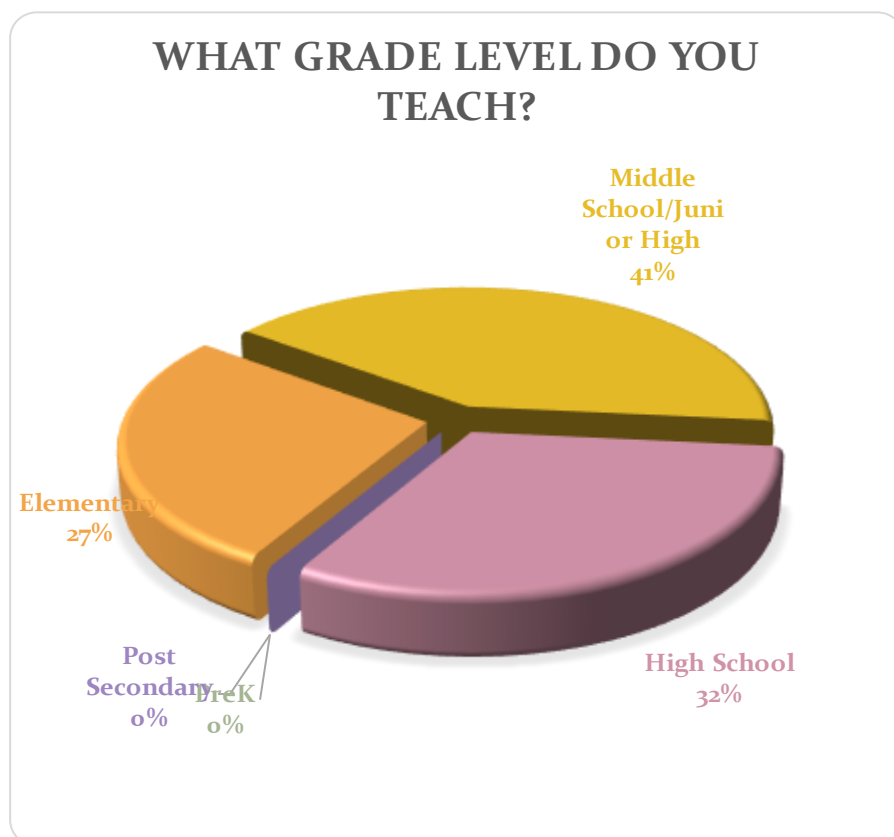
## Years of Experience

How many years have you been teaching?	Years Teaching
0-5 years	15
6-11 years	20
12-17 years	15
18+ years	13



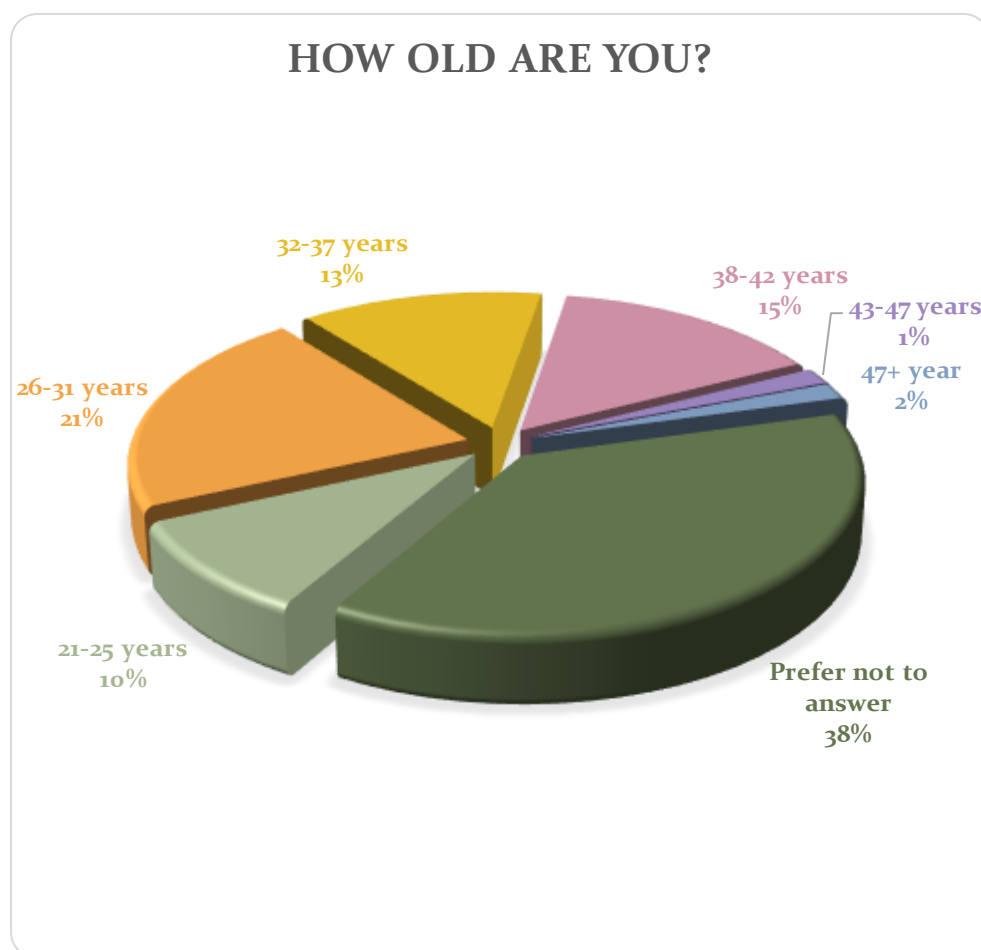
### Grade Level Taught

What grade level do you teach?	Grade
PreK	-
Elementary	17
Middle School/Junior High	26
High School	20
Post Secondary	-



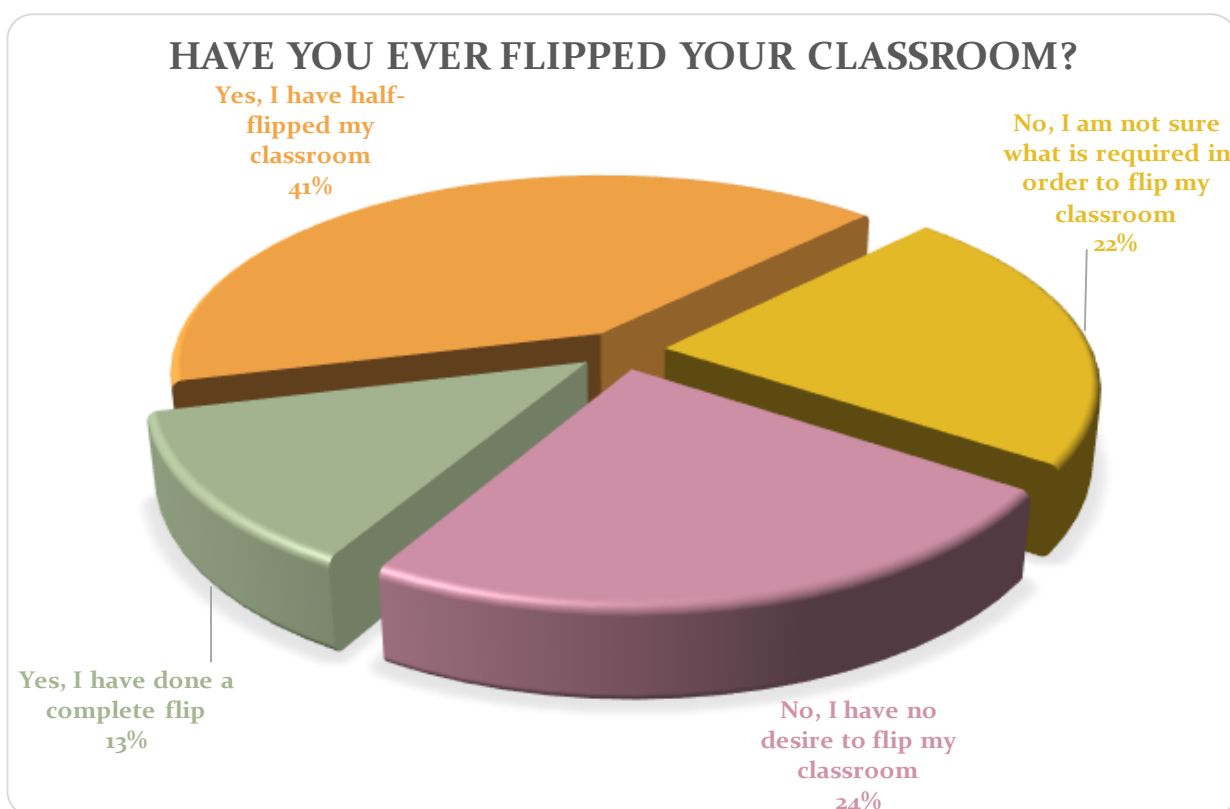
## Respondents Age

How old are you?	Number Responded
21-25 years	6
26-31 years	13
32-37 years	8
38-42 years	9
43-47 years	1
47+ year	1
Prefer not to answer	23



## Flipped Classroom

Have you ever flipped your classroom?	Answer
Yes, I have done a complete flip	8
Yes, I have half-flipped my classroom	26
No, I am not sure what is required in order to flip my classroom	14
No, I have no desire to flip my classroom	15



## Open-ended Responses to Flipped Classroom Question

### If you answered no to the question above, could you explain?

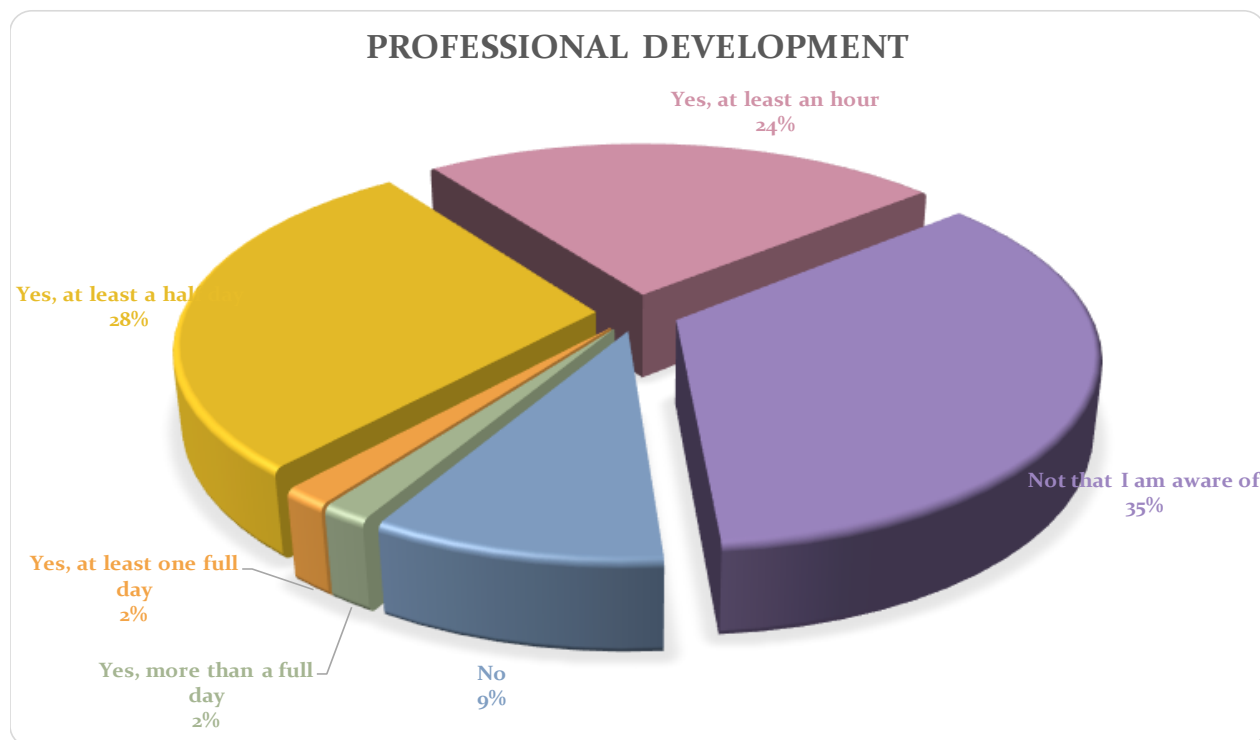
- I've talked to other teachers who have done it, and they say it is a lot of work without much difference.
- I'm brand new, haven't had any training in it.
- I have my own method of teaching that seems to work
- NA
- Do not feel confident in flipping my classroom, no training.
- NA
- Too much to do already
- I know about it, but don't understand really what the procedures are to do it in my classroom
- It's not easy teaching my kids to use the tech in the correct way, I would be scared that they would end up breaking the items
- I haven't taken the time to learn about it
- I've only seen it in one classroom and it's a bit confusing to me
- Technology outside of the classroom may be hard for some of my students, so I don't want to pressure them in that way too
- So many fads, so many times trying fads, no reason to keep changing when it seems to go back to the way I've always been teaching
- Tech training isn't great here, they expect us just to know how to use it, I'm not that great at technology
- There have been a few teachers who have flipped their classrooms in my building, and I'm interested in it, but not sure how to do it.

- I don't know what to do
- I don't know what to do
- I've never had training, but I'm curious about it.
- I like what other teachers are doing, but I'm close to retiring, so I don't want to start over
- I love the concept but I have no idea what I would need to do or where to get started.
- I've studied it and I think it would be great for older grades, not my younger kids
- Technology is great, but I fear that we depend too much on it. I don't want to make my students feel that they need tech in order to survive in the world
- It's not that I don't know what's required, it's that I'm too scared to use the equipment with my kids. I feel that they are not mature enough to handle the responsibility. And I've heard of the cyber-bullying that goes on, how the kids break stuff, etc. It seems like it would be more of a waste of money than anything in the elementary level. I know there are teachers who have great success with it, but it just seems too much for my kids.
- I've heard it's a lot of work
- heard about it, but not sure what to do in order to flip my class
- Been doing this too long to start over
- There is a lot that goes into it, and I like the teaching model I already use.
- I haven't seen any research that says that students will do better in school. If I do, I may try it.
- I don't really understand the concept, not that I've looked too hard.
- I'm still new to the job, so I am really uncomfortable trying something new right now when I feel like I'm still learning to teach
- I'm not sure what to do



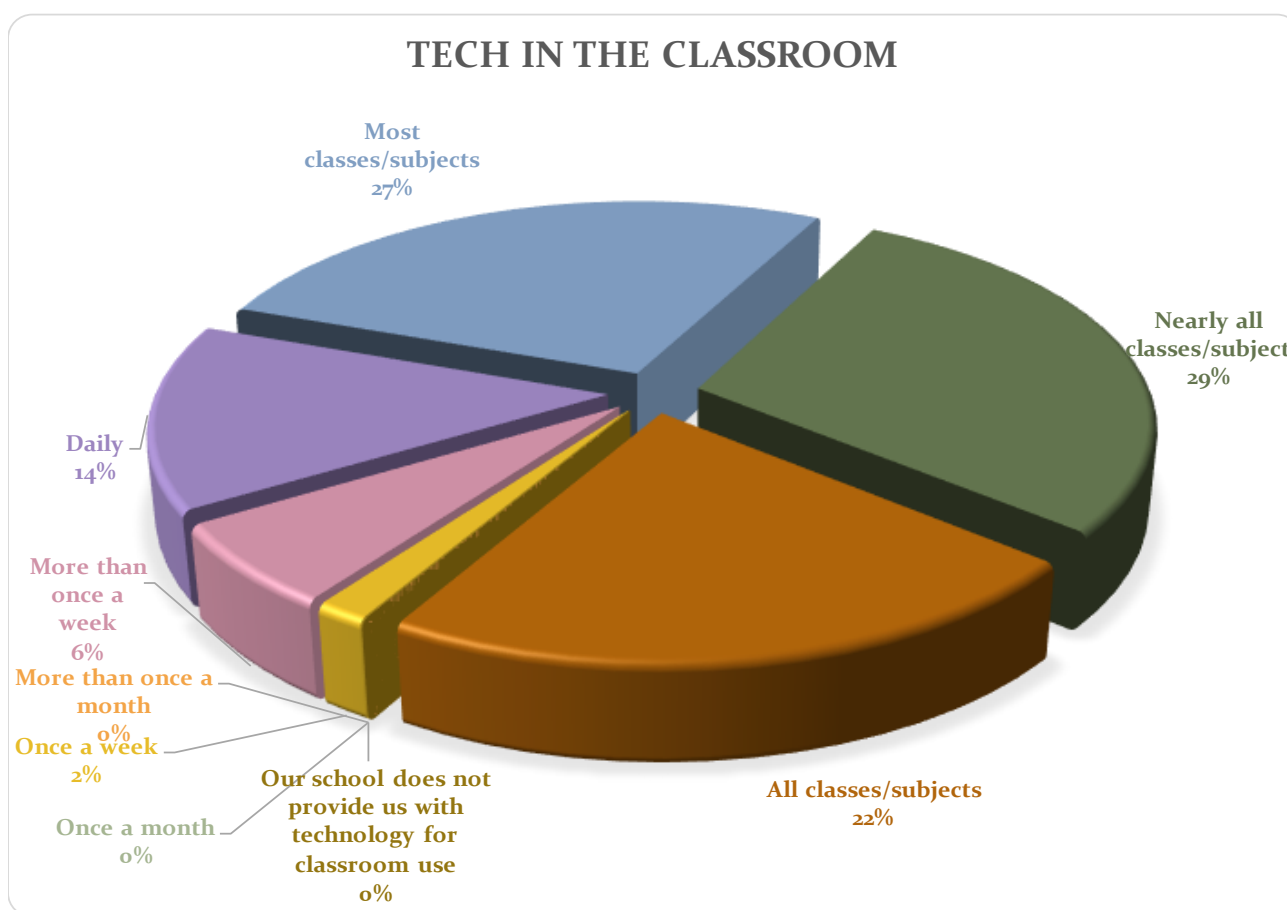
## Professional Development

Have you had the opportunity to receive professional development on the flipped classroom model?	Amount of Time Spent
Yes, more than a full day	1
Yes, at least one full day	1
Yes, at least a half day	18
Yes, at least an hour	15
Not that I am aware of	22
No	6



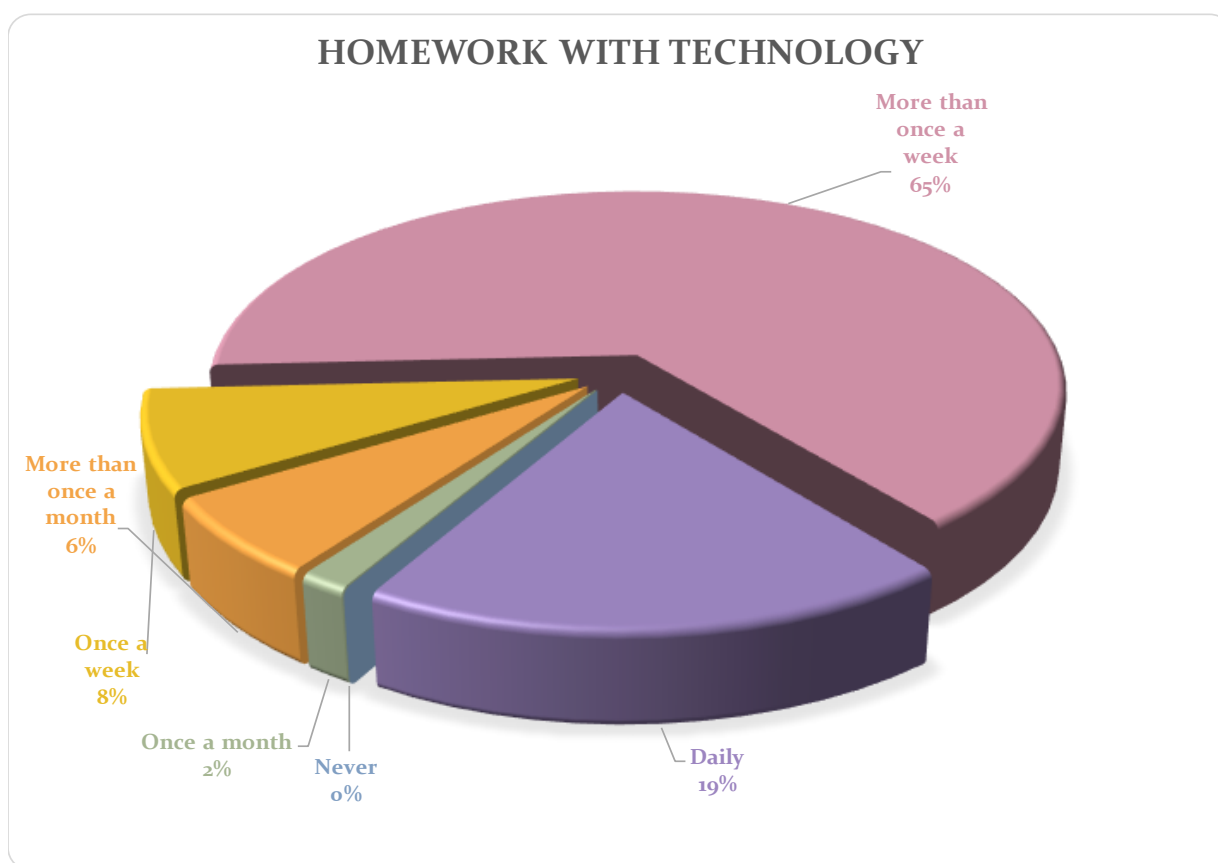
## Use of Technology in Classroom

How often do you use technology (i.e. Chromebooks, iPads, mobile devices, etc.) in the classroom?	Tech use
Once a month	-
More than once a month	-
Once a week	1
More than once a week	4
Daily	9
Most classes/subjects	17
Nearly all classes/subject	18
All classes/subjects	14
Our school does not provide us with technology for classroom use	-



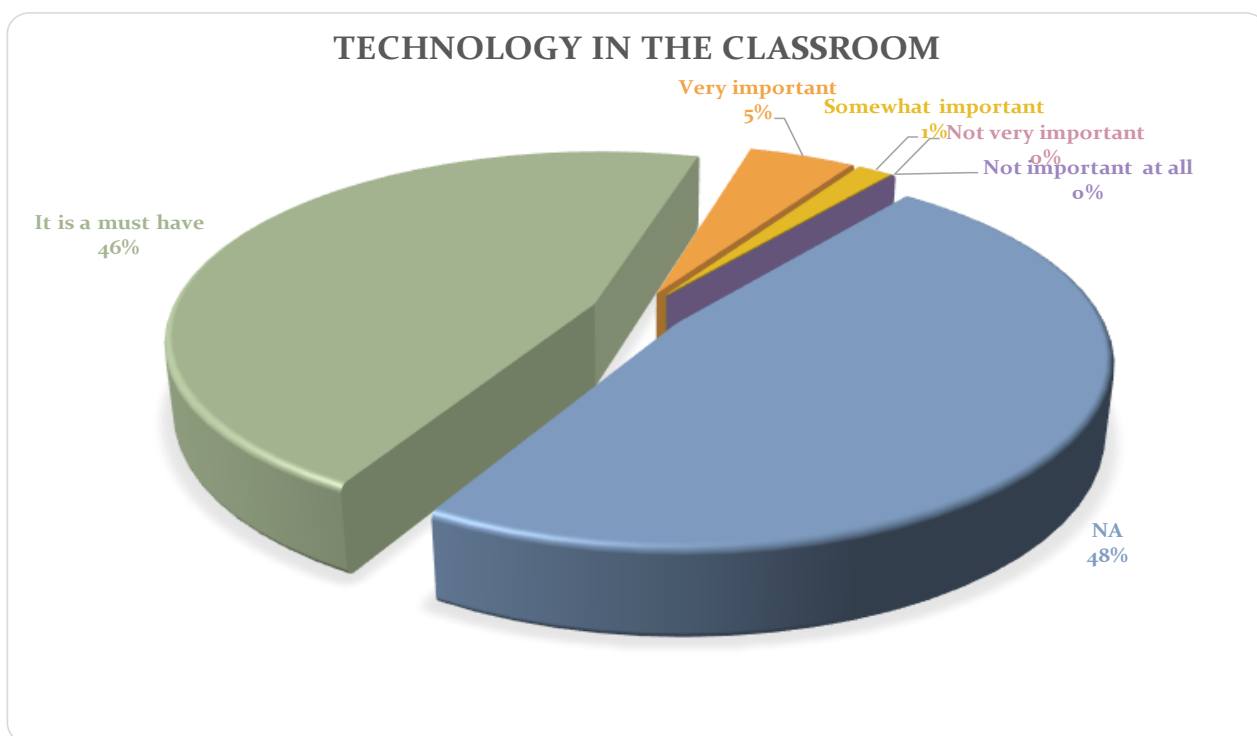
## Homework Requiring Technology

How often do you assign homework that requires the use of technology (i.e. Chromebooks, iPads, mobile devices, etc.) at home?	Tech use
Once a month	1
More than once a month	4
Once a week	5
More than once a week	41
Daily	12
Never	-



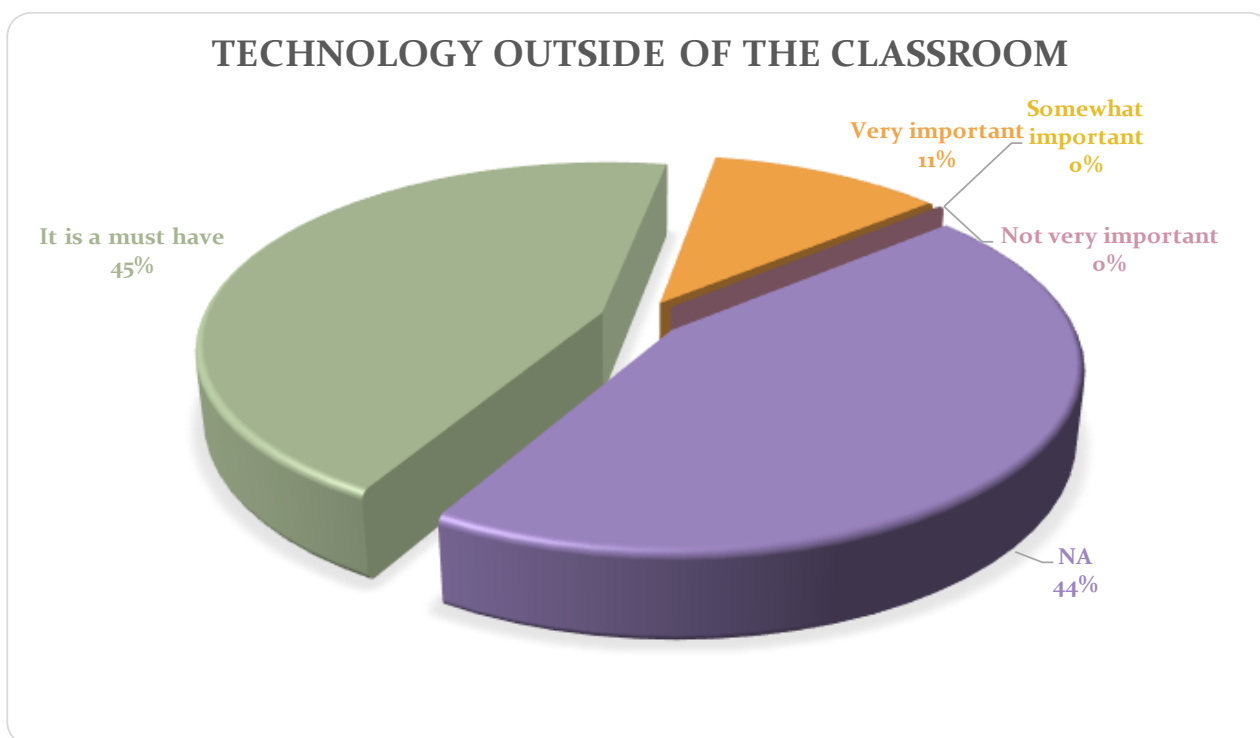
## Technology in Classroom for Student Use

If you have flipped your classroom or are starting to flip your classroom, how important is it to have technology (i.e. Chromebooks, iPads, mobile devices, etc.) for students to use during class?	Importance
It is a must have	29
Very important	3
Somewhat important	1
Not very important	-
Not important at all	-
NA	30



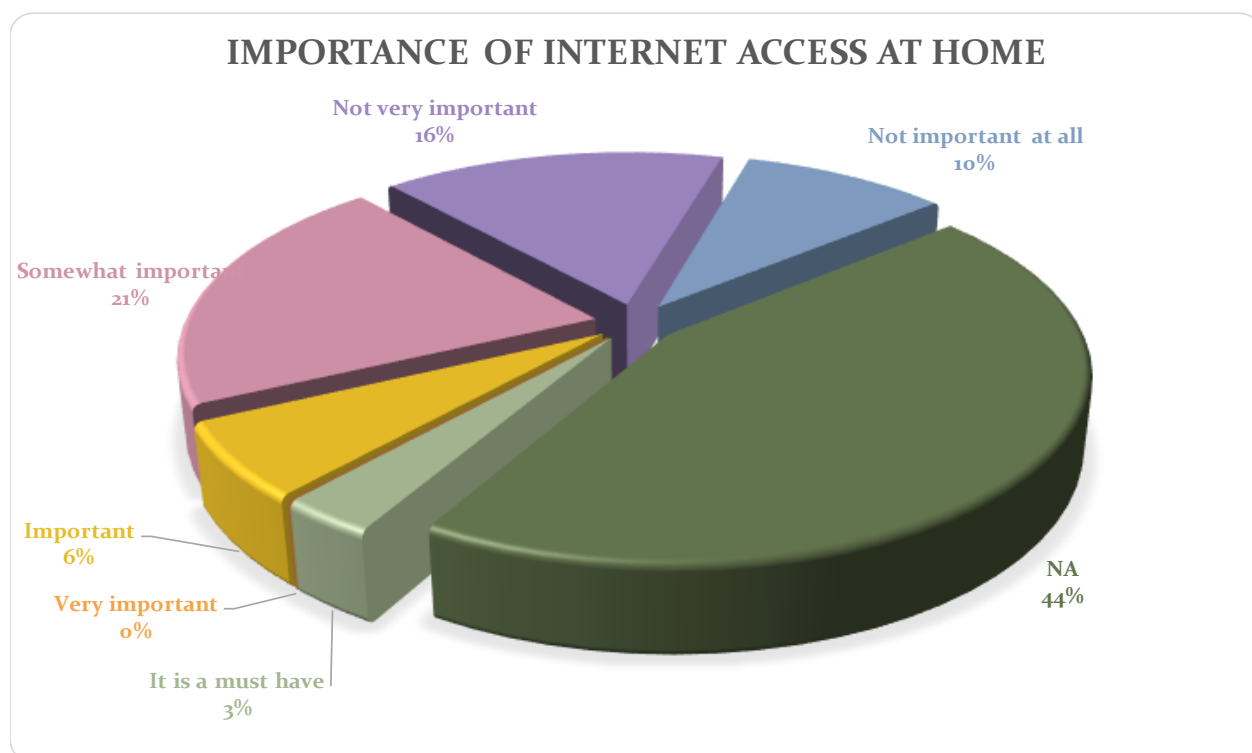
### Importance of Technology Outside of Class

If you have flipped your classroom or are starting to flip your classroom, how important is it to have technology (i.e. Chromebooks, iPads, mobile devices, etc.) for students to use outside of class?	Importance
It is a must have	28
Very important	7
Somewhat important	-
Not very important	-
NA	28



## Internet Access at Home

If you have flipped/starting to your classroom, how important is it to have internet access at home?	Importance
It is a must have	2
Very important	-
Important	4
Somewhat important	13
Not very important	10
Not important at all	6
NA	28



## Open Ended Responses to Internet Access Question

**If you answered not very important or not important at all, can you explain why?**

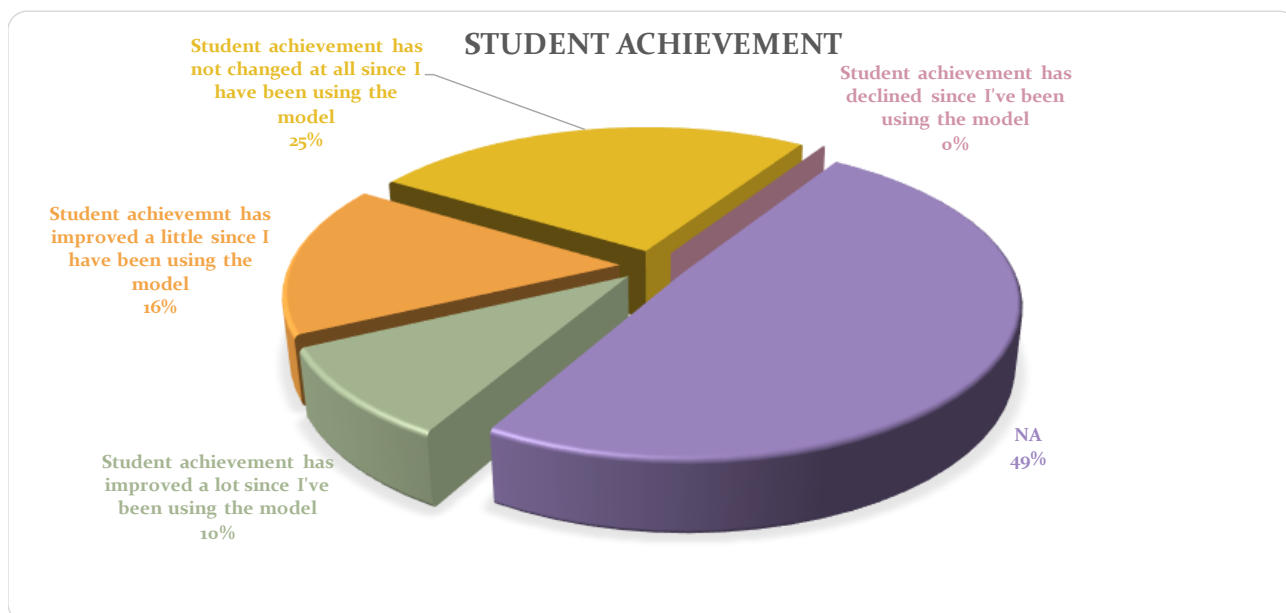
- I always ask who has internet access at the beginning of the year, for those who do not, it is an easy download for them to get what is needed for viewing outside of school
- If my students don't have internet access, I put my recording on a USB for them, they just need something to plug into.
- NA
- I can download my stuff for the kids to watch if they don't have internet
- NA
- My classes can be downloaded onto the devices or a USB can be given if they don't have internet access
- NA
- All of my stuff I have the students watch at home can be downloaded if they don't have access
- NA
- Everything can be downloaded if the student needs it to be
- I can have them download the stuff I need them to do before they leave class
- My stuff can be uploaded to their device before they leave school. If they don't have internet at home and need to do something for class, I am aware of it and have offered to stay while they use a computer during lunch, before or after school. I am doing the flip, so I'm making myself available.

- Most of my stuff is either downloaded or on a usb, otherwise if they don't have internet, the library is open or the public library can be used
- NA
- Can download anything for the students if they don't have Internet
- Can download what I need them to watch outside of school, either on to their device, or a USB/CD
- Downloadable onto device or USB



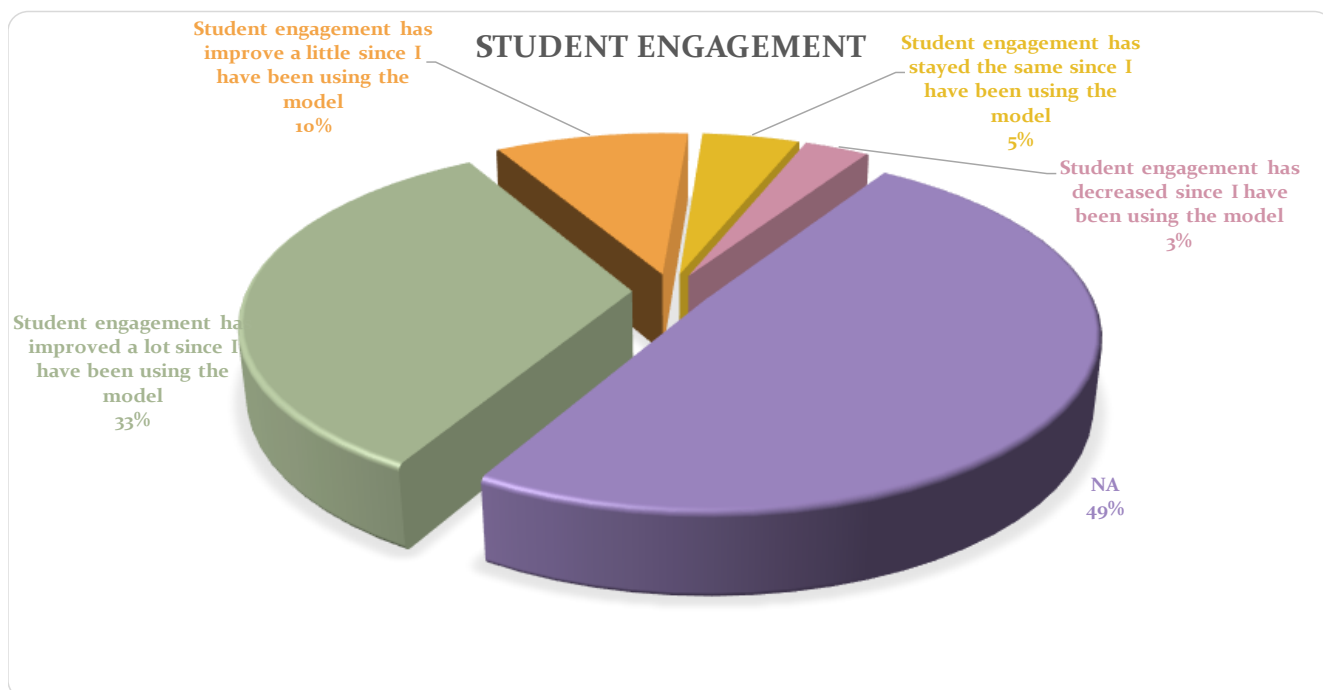
## Student Achievement

If you have flipped your classroom or are starting to flip your classroom, have you noticed a difference in student achievement?	Achievement
Student achievement has improved a lot since I've been using the model	6
Student achievement has improved a little since I have been using the model	10
Student achievement has not changed at all since I have been using the model	16
Student achievement has declined since I've been using the model	-
NA	31



## Student Engagement

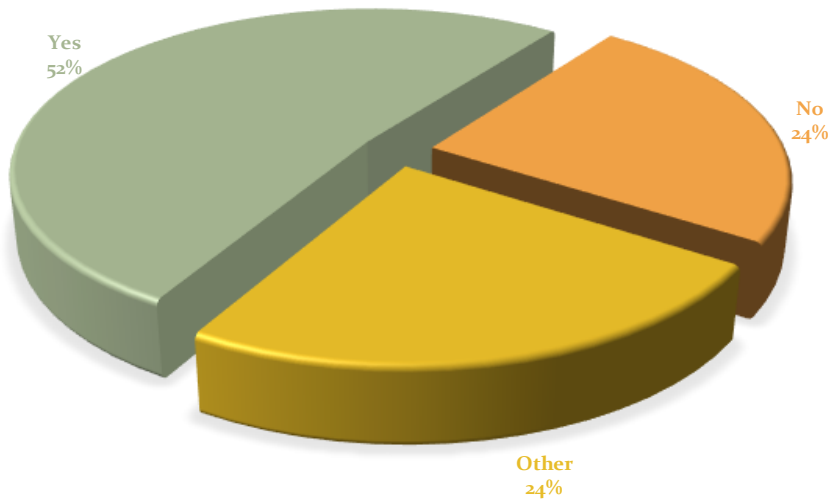
If you have flipped your classroom or are starting to flip your classroom, have you noticed a difference in student engagement?	Engagement
Student engagement has improved a lot since I have been using the model	21
Student engagement has improve a little since I have been using the model	6
Student engagement has stayed the same since I have been using the model	3
Student engagement has decreased since I have been using the model	2
NA	31



**Flipped Model**

If you have not flipped your classroom, do you believe it is a model worth learning about?	Answer
Yes	15
No	7
Other	7

**DO YOU BELIEVE THE FLIPPED MODEL IS WORTH LEARNING ABOUT?**



## Flipped Model Question Open Ended Responses

If you have not flipped your classroom, do you believe it is a model worth learning about?

- No
- I have flipped my classroom, and I feel that it wasn't worth it. Nothing has changed, except for I have a lot of extra work to do.
- Yes
- Yes
- I think all models of teaching are important, it helps us learn how to be better teachers, but it seems like educators always try something and then go back to what they know.
- Learning different teaching techniques is always important, but I don't have time to try that one
- No
- It would be if we had a great tech teacher that showed the students how to properly use the equipment
- No
- Yes
- I don't know enough about it, I guess we'll see if it becomes valid
- Yes
- Yes
- Yes
- Yes
- Yes
- All teaching models are worth learning about
- Yes
- Yes
- Yes
- Yes
- No
- Yes
- I think if I were newer I would want to learn about it
- No
- Yes
- No
- No
- Yes